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ADDRESS IN STATE MEDICINE.

RECENT ADVANCES IN PREVENTIVE MEDICINE.

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Progress in any branch of science or art may be measured in two ways: by the number and character of new discoveries made; or by the gradual advances in the application of knowledge previously acquired. Judged by either of these criteria the record of the past year is a creditable one to the comparatively newly cultivated field of State Medicine. In the brief time at my command, I shall endeavor to sketch concisely, and in outline merely, what has been accomplished during the year in this domain.

EPIDEMIOLOGY AND ENDEMIOLOGY.

Adverting first to the extension of the fifth great pandemic of *Asiatic cholera*, which began in 1883, it will be seen that the danger of an invasion of this country has not yet passed; but that, on the contrary, it is greater than at any time within the last three years. Both in 1886 and in the present year the disease has continued in Southeastern Italy, and in the Austrian dominions at the head of the Adriatic.

In Japan the epidemic began in the summer of 1885, and after a period of cessation during the winter recurred in 1886. In the latter year there were 154,373 cases, with 101,695 deaths.

In November, 1886, cholera was carried to South America, in an Italian ship, the "Perseo," bound from Genoa to Buenos Ayres. The disease rapidly spread in the Argentine Republic, and crossing the Andean range invaded the Pacific coast of the South American continent.

If the present geographical distribution of cholera be taken in view, it will be seen that the United States are threatened by an invasion of this disease from three sources; first, from Europe, by way of the Atlantic ocean; second, from Japan by way of the Pacific ocean; third, from the west coast of South America by way of the Pacific ocean, or by way of Mexico and our Southern border. The Isthmus of Panama and the South Atlantic transportation lines may also act as gateways to the infection. The present apparent lull in the activity of the disease should not tempt health authorities to relax their vigilance, or neglect the precautions inculcated by sanitary science.

The investigations into the etiology of cholera have proceeded on the lines marked out by Koch, in his Egyptian and Indian researches. The conclusions arrived at by Dr. Shakespeare, who was sent to Spain to study the disease, by the United States Government, are that the discovery of the cholera spirillum by Koch places in the hands of the profession an infallible means of diagnosis. Dr. Shakespeare does not commit himself to the view that the spirillum is the absolute cause of the disease. The general tendency among bacteriologists is, to accept the views of Dr. Koch, both in regard to the infective agent, and to the medium through which the infection gains entrance to the body, namely, contaminated food and drink. Pettenkofer, however, though admitting the agency of the spirillum, still maintains the necessity of certain local and temporary conditions of soil, more particularly in relation to the movements of the ground-water, in order to produce an outbreak. It may be stated casually that Dr. Shakespeare reports that the results of Señor Ferrán's inoculations were more favorable than the profession were led to believe at the time they created so great a sensation.

Yellow Fever appeared within the limits of the United States at only one place during the year, namely, at Biloxi, a summer resort on the Gulf coast of Mississippi. The proximity of Biloxi to Ship Island, the national quarantine station, probably accounts for the appearance of the fever at the former place. Prompt enforcement of sanitary measures, such as isolation of patients and disinfection of surroundings soon put an end to the outbreak.

The claims of Drs. Domingos Freire, of Brazil, and Carmona, of Mexico, concerning protective inoculation against yellow fever have been reiterated during the year. The latest information upon this important subject available comes in the shape of a dispatch from the United States Consul at Maracaibo, Venezuela, who reports under date of March 7, 1887, that Dr. Bustamente of Cucuta, Columbia, had practised inoculation with success. The following quotation is from Dr. Bustamente's letter: "For the present I will confine myself to the statement that in more than forty persons whom I have inoculated, a fever, with many of the characteristic symptoms of yellow fever, has presented itself. This fever developed by inoculation, varying several tenths of a degree, and in some cases ascending to 41° C. (105.5° Fahr.) but never presenting the most grave symptoms of yellow fever. The result of my observations permits

me to state positively that the fever produced by inoculation is attended with no danger, and it is safe to inoculate, as I have already done, from children two years of age to the oldest individuals. Many of the persons inoculated have come to this city, and in no case has the yellow fever attacked them which gives me hope of a final result completely satisfactory." Dr. Bustamente also states that the municipality of Cucuta, assisted by private enterprise, has dispatched a commission, composed of two physicians, to Mexico to study the inoculation of the fever.

In Brazil and Mexico the inoculations are said to amount to many thousands and complete success is claimed by Freire and Carmona and their partisans. Others have, however, expressed grave doubts of the accuracy of the observations published. The last Congress, recognizing the importance of a solution of this question to the people of the United States, authorized the appointment of a commission to proceed to South America and Mexico and thoroughly investigate the validity of the claims of Drs. Freire and Carmona. President Cleveland, with the good sense characteristic of him when dealing with scientific interests has appointed Major George M. Sternberg, Surgeon U. S. Army, as the Commissioner to perform this duty. The profession and the public may look forward with confidence to a thorough and unprejudiced investigation of the claims of Freire and Carmona. Dr. Sternberg sailed for Brazil on May 4, to begin his researches at the home of Dr. Freire.

Limited outbreaks of *small-pox* occurred during the year in New York city and Brooklyn and at Los Angeles in Southern California. At the latter point the disease was introduced from Mexico. At present the epidemic seems to be well under control by the State Board of Health and local sanitary authorities.

In this connection, reference may be made to the discussion recently re-opened by Dr. Fleming, the distinguished English Veterinarian seconded by the accomplished editor of the *New York Medical Journal* (Dr. Frank P. Foster), on the doctrine of identity of human variola and cowpox. Dr. Fleming believes he has shown the doctrine to be a fallacy, and in this view is strongly supported by Dr. Foster. According to Dr. Foster, the supposed vaccinations of over three thousand persons with the virus of variolated cows, and its successive humanized cultures, made by Ceely and Badcock, of England, Adams, of Massachusetts, and Knight, of Baltimore, were merely inoculations of variolous matter which had not undergone any modification in consequence of its transmission through the bovine subject. This is equivalent to saying that experienced observers as those above mentioned certainly were, are unable to perceive the the clinical difference between vaccinia and inoculation-variola. From such a point of view most clinical observation could be called in question. No evidence whatever is on record proving that cow-pox is anything other than variola as it affects the cow. Negative testimony based upon failures to inoculate small-pox virus upon cows by certain observers, can have no force in face of the comparatively numerous positive results obtained by others. Cumulative increase of such negative evidence does not add to its strength.

The admitted dangers of humanized vaccine from syphilis and perhaps other diseases, and the many inconveniences attending the use of bovine virus—such as prolonged incubation, untrustworthy supply, etc., have stimulated endeavors to cultivate the microbe upon which the infective power of vaccine virus may reasonably be assumed to depend. In an extended series of experiments recently made, Dr. John Dougall, already favorably known for his accurate work in the field of bacteriology, has attempted to secure this result but without success. Where pure cultures of an organism were obtained through successive generations, it was found that the infectiveness of the microbe was lost. Hence, the experiments of Dougall even failed to demonstrate whether the organisms found were specific. Garré, a German bacteriologist, has also quite recently investigated the subject, with more success. His pure cultures were inoculable upon animals but not upon man. In the vesicles resulting from the inoculations the same organisms that composed the culture were found. While these results are indefinite, they encourage us to look for success in the near future.

Whether the protective power of vaccination is permanent or whether it diminishes in the course of time is still occasionally the subject of discussion in sanitary publications. In recent papers Wolfiberg has carefully reviewed the entire question from various points of view, and has arrived at the conclusion that the protective influence of vaccination does not diminish, but that the natural susceptibility to small-pox increases in the human subject after the fifteenth year of life. Hence, re-vaccination after that age is an important safeguard. The inference derived from these studies of Wolfiberg would seem to be that a thorough vaccination at or after the fifteenth year is protective for life.

Scarlet Fever, one of the most fatal plagues of infantile life, has attracted especial attention in connection with the startling assertion of its apparent origin from a disease occurring in cows. The evidence in support of this claim is briefly as follows: Mr. W. H. Power, of the English Local Government Board, was detailed to investigate certain outbreaks of scarlet fever, which seemed to have especial relation to the milk supply from a particular dairy farm. Upon inspection this dairy was found to be in excellent sanitary condition as regards cleanliness, water supply, sewerage, etc., and for a time considerable difficulty was experienced in locating the cause of the outbreaks. Improbable, as it may at first sight appear, it seems to have been incontestably established, that the epidemics of scarlatina were due to the use of milk obtained from cows attacked by a peculiar disease manifested in general by a vesicular eruption followed by ulceration of the udder. The chain of circumstances connecting the disease in the cows with the outbreaks of scarlet-fever in certain districts in London, supplied with milk from the diseased cows, was so strongly forged by the able investigator into whose hands the work had been committed by the authorities, that no doubt can exist that the one disease owed its origin to the other.

The same outbreaks were studied by the eminent pathologist, Dr. Klein, from another point of view. Procuring some material from the ulcerated udders of the sick cows, he cultivated a micro-organism, which, when inoculated into healthy calves, produced in them lesions similar to those existing in cows from whom the material was obtained. Dr. Klein has found a micrococcus presenting similar characters in the blood of scarlet fever patients. Mice fed with cultures from both these sources were similarly affected. From the blood of the infected mice the same micro-organism was obtained and cultivated. When re-inoculated upon calves it produced identical lesions with the material from the diseased cows. Thus the proof seems complete that a disease of cows heretofore considered unimportant is identical in nature with one of the most dreaded diseases affecting the human race. That the etiological factor of scarlet fever is a bacterial organism seems also to be satisfactorily demonstrated by the researches of Dr. Klein. These discoveries when fully appreciated, must exert a beneficial influence upon the efforts of sanitary authorities to restrict this fatal disease. A conviction of the bacterial nature of scarlet fever will tend to impress upon physicians the importance of personal measures of prevention. If, as is generally assumed, the infective agent of scarlet fever is contained in the epidermis, thorough disinfection of the surface of the body will reduce the period of infectiveness of the person who has passed through an attack. Instead of six to eight weeks, as now recommended, the period of isolation, when accompanied by appropriate measures of disinfection, may probably be reduced to one week after the cessation of the active symptoms. This gain of time will often be a matter of great importance. That even the less complete measures of isolation and disinfection heretofore practiced in certain places are effective, is demonstrated by Dr. Henry B. Baker, the efficient secretary of the State Board of Health. He has shown most conclusively in a statistical table recently published, that the general practice of restrictive measures in scarlet fever, by the people of Michigan, since 1887, has resulted in a probable annual saving in that State of 338 lives from this one disease. These results likewise show the value of an efficient, public spirited, and wide-awake State Sanitary organization.

Dr. Baker has also recently published an abstract of his researches into the causation of *pneumonia*. From a study of the meteorological conditions for a long series of years together with the varying prevalence of pneumonia, he finds that certain meteorological elements are so uniformly associated with sickness from pneumonia as to make it appear that they bear an etiological relation to that disease. These meteorological elements are the amount of ozone, the temperature, the relative and absolute humidity, the velocity of the wind, and, in a measure, the atmospheric pressure. Unfortunately all of these conditions are so closely related and dependent one upon another, that no one of them can be picked out as the most important factor. However, Dr. Baker believes that the temperature of the outside air, governing to a great degree the other meteorological conditions mentioned is the main factor to be taken into account. Graphic charts which he has constructed show a very close relation between the average temperature and the sickness from pneumonia; "and the curves representing sickness from pneumonia follow uniformly at such a period after the temperature curves as to make it seem certain that the sickness is directly or indirectly caused by a comparatively low temperature."

The established relation of pneumonia morbility to a cold, dry atmosphere suggests certain measures for the prevention of the disease. Such measures would be to secure to as great a degree as possible, warm, moist air for respiration. How to accomplish this both within and without doors is a problem to tax the ingenuity of the practical.

I may call attention also in this place to the clinical reports of outbreaks of infectious pneumonia by Graham, Lee, Thane and others, as well as to the recent researches upon the micro-organism which is

A comparison of the deaths from Scarlet Fever, reported to the Secretary of State as having occurred in Michigan during the five years (1869–73) just preceding the organization of the State Board of Health, with the three years (1874–76) immediately succeeding its organization, and those three years (1874–76) with the eight years (1877–84), during which the document on Restriction of Scarlet Fever was distributed; also the five years (1869-73) just before the establishment of the Board, with the eight years (1877–84) during the use of the document; and finally, a comparison of the five years (1869–73) just preceding the work of the Board, with the eleven years (1874–84) since the State Board of Health was established.

Periods of Time Compared.	Estimated Average Population.	Average Deaths Reported per Year.	Total Reported Deaths.	Average Reported Deaths per Year per 10,000 Inhabitants.	Decrease of Deaths per Year per 10,000 Inhabitants.	Average Decrease of Reported Deaths per Year.[1]	Lives Probably Saved According to the Reports.[2]
5 years, 1869–73...	1,215,220	589	2,945	4.85			
3 years, 1874–76...	1,384,515	421	1,262	3.04	1.81	252	756
3 years, 1874–76...	1,384,515	421	1,262	3.04			
8 years, 1877–84...	1,689,988	449	3,595	2.66	.38	64	512
5 years, 1869–73...	1,215,220	589	2,945	4.85			
8 years, 1877–84...	1,689,988	449	3,595	2.66	1.19	370	2,961
5 years, 1869–73..	1,215,220	579	2,945	4.85			
11 years, 1874–84..	1,609,023	442	4,857	2.75	2.10	338	3,718

[1] Probably not all deaths were reported before or since the organization of the Board, consequently the saving is probably greater than is here shown.
[2] Allowing for increase of population.

supposed to be the cause of lobar pneumonia. So far as the latter is concerned, pathologists have not yet arrived at unanimity. Weichselbaum found organisms in every one of a series of 129 cases. The microbes found were of four different forms: 1. A diplococcus which seems to be morphologically and biologically identical with Sternberg's *Micrococcus Pasteuri*. This was present in the lungs or sputa of 94 cases. 2. A streptococcus which was found in 21 cases, none of them of the croupous, or lobar, variety. 3. Staphylococcus pyogenes aureus and albus, the organisms of pus. These were present in 5 cases of secondary pneumonia; and 4, a bacillus or oval micrococcus, which presents all the characteristics of Friedlander's so-called "pneumococcus," was present in only 9 of the cases.[1]

Weichselbaum also confirms the statement first made by Sternberg, that organisms similar to, or identical with those found in the lungs in pneumonia (*micrococcus Pasteuri*, Sternberg) are often found in the secretions of the mouth and respiratory tract in healthy individuals. Hence, while the microbes mentioned, and especially the M. Pasteuri, must be looked upon as the specific agents in producing pneumonia, certain predisposing agents are necessary to enable the organisms to proliferate and produce their pathological effects. The predisposing or favoring causes may perhaps be found in the atmospheric conditions claimed by Baker to stand in close relation with the prevalence of pulmonary inflammation. There seems every reason to believe that a solution of this important question is near at hand.[2]

The contagiousness of *tuberculosis*, and its dependence upon the bacillus discovered by Koch, seem to be so well established that rational measures for the restriction of this most fatal and universal of all pestilences should command the attention of physicians and the public. It is coming to be accepted that phthisical patients should not be treated in the same hospital wards with non-tuberculous individuals.

A tuberculous patient in a hospital ward must be regarded as a constant focus of infection from which the disease is spread. Prompt disinfection of the sputa and other discharges of the tuberculous individuals will doubtless reduce the cases by diminishing the opportunities for infection. At the conference of the State Boards of Health of this country held in Toronto, last October, a resolution was adopted to the effect "that it now seems probable that progress can be made in the restriction of consumption by declaring to the people that care should be taken to destroy or disinfect the sputa from persons suffering from pulmonary consumption." This public declaration of the foremost sanitarians of America is worthy of the careful consideration of every one interested in the prevention and cure of this deadly malady.

In concentrating our attention upon the pernicious effects of the bacillus tuberculosis, however, we should not lose sight of the fact that other circumstances must be considered in accounting for the origin and spread of consumption. The epoch-making discovery of the causal agency of soil moisture, by Dr. H. I. Bowditch, over twenty-five years ago, is apparently confirmed by the result of a study of the topographical distribution of phthisis in Pennsylvania made by Dr. William Pepper during the past year. Other predisposing conditions, such as defective ventilation, insufficient or improper food, and other depressing agencies, must be admitted as at least predisposing to the development of the disease. There is danger that a too exclusive attention to the microbian factors of disease will narrow our views of epidemiology and preventive medicine. As there is more in pathology than the discovery and culture of bacteria, so there is more in preventive medicine than the discovery and application of microbicides.

The micro-organism first described in 1880 by Eberth as the cause of *typhoid fever* has now obtained general recognition, and a number of careful researches during the past year seem to have firmly established its etiological importance. In a paper read before the Association of American Physicians last year, Sternberg has given a summary of all the experimental evidence available up to that time, and concludes that it is convincing as regards the etiological rôle of this bacillus.

If we regard the evidence in favor of the causal relation of this microbe as sufficient, and accept the conclusions of most epidemiologists, that the typhoid poison is contained only in the intestinal discharges, and by gaining access to drinking-water spreads the disease when taken into the stomach of susceptible individuals, some recent bacteriological investigations will claim our interest.

Meade Bolton, Wolffhügel and Riedel, and Percy Frankland have studied the behavior of different micro-organisms in water of various degrees of purity. While Bolton arrived at the conclusion that pathogenic bacteria—typhoid bacillus, staphylococcus aureus, etc.—rapidly lost their vitality in water, the other observers mentioned found that these organisms increased. Cholera spirilli were found to become apparently acclimated to the water, and preserved their activity seven months after they were added to the water. Prudden has also shown, in a recent research, that typhoid bacilli contained in water are not entirely destroyed by freezing, even after remaining in this condition for 103 days.

Further, Chantemesse and Widal have recently demonstrated the presence of the typhoid bacillus in

[1] "We may eventually find that there are various pneumonia-cocci, just as we have learned that the pus of acute abscesses contains sometimes one and sometimes another coccus; or, again, two or more in association." Sternberg, Trans. Path. Soc Phila., vol. xii.

[2] "The constant presence of this micrococcus in the buccal secretions of healthy persons, indicates that some other factor is required for the development of an attack of pneumonia; and it seems probable that this other factor acts by reducing the vital resisting power of the pulmonary tissues, and thus making them vulnerable to the attacks of the microbe. This supposition enables us to account for the development of the numerous attacks of pneumonia which cannot be traced to infection from without. The germ being always present, auto-infection is liable to occur when, from alcohol, sewer-gas poisoning, crowd poisoning, or any other depressing agency, the vitality of the tissues is reduced below the resisting point. We may suppose, also. that a reflex vaso-motor paralysis, affecting a single lobe of the lung, for example, and induced by exposure to cold, may so reduce the resisting power of the pulmonary tissue as to permit this micrococcus to produce its characteristic effects.

"Again, we may suppose that a person, whose vital resisting power is reduced by any of the causes mentioned, may be attacked by pneumonia from external infection with material containing a pathogenic variety of this micrococcus having a potency, permanent or acquired, greater than that possessed by the same organism in healthy buccal secretions." Sternberg, ibid.

water from a well at Pierrefonds, near Paris, which had caused a small outbreak of typhoid fever. Now, these facts, taken in connection with extensive epidemics of typhoid fever, such as that occurring at Plymouth, in Pennsylvania, in 1885, which was undoubtedly traceable to infected water, point irresistibly to the conclusion that the only practical way to prevent typhoid fever is to disinfect promptly and thoroughly all the alvine discharges of the patient, before emptying them out of the vessel in which they are received. During the past winter, the Committee on Disinfectants of the American Public Health Association has concentrated its labors upon the determination of the best means of destroying the typhoid infection. The results of this research have not yet been published, but I am able to state that the Committee will, before the end of this year, place at command of the profession the means to absolutely prevent the spread of typhoid fever, provided the disease-producing cause is developed only in the intestinal canal of those sick with this disease.

PUBLIC DISINFECTING STATIONS.

Disinfection, or the destruction of the infective power of infectious material occupies to-day a higher place in the practical applications of preventive and curative medicine than ever before. Merely referring to the exact experimental observations upon the relative value of various articles used as disinfectants, published last year under the auspices of the American Public Health Association, and to be supplemented during the present year by some very important results, I would call attention to the establishment of public disinfecting stations, as lately put in operation in some European cities. In Berlin, Dusseldorf, Gottingen, Strasburg, Breslau, Leipsig and Danzig such disinfecting stations are now in use and at the command of the public, under proper official control. Steam under pressure is used at most of the above as the disinfecting agent, although at some super-heated steam not under pressure is employed. Sanitarians generally prefer the former. Such disinfecting establishments should be established in every American city and free to everybody. They should be under the control of the health authorities who should be held responsible for their proper management. In all contagious and infectious diseases, all possibly infected objects should be disinfected. The attending physician should decide when and for what objects disinfection is necessary. If any physician fails to recognize the importance of this prophylactic measure, his record as purveyor of contagious diseases will soon become known in the community in which he practises and the intelligent portion of the public will learn to avoid him. That the public are not opposed to availing themselves of the advantages of these institutions is shown by the experience of the station in Leipzig, to which articles not infected, but simply requiring cleaning, such as pillows and feather beds, were sent, because by the action of steam the elasticity of the feathers was restored. Some control is therefore necessary to prevent persons using the disinfecting stations as free laundries. This control is best placed in the hands of the attending physician without whose order no one should have a claim for free disinfection. The physician can best decide in any case as to the necessity or non-necessity of this procedure.

With the definite, scientific character to which practical disinfection has of late been brought, sanitarians are beginning to consider whether quarantines of detention and observation may not be largely abandoned. The success of the system of "maritime sanitation"—in other words thorough disinfection, practised at the Louisiana quarantine station under the intelligent and energetic direction of Dr. Joseph Holt during the past three years, has demonstrated that quarantine must mean in the future something entirely different from what it meant in the past. The quarantine of the future will not be an obstruction to commerce or a hindrance to international intercourse.

M. Proust has during the present year, in a paper read before the French Academy of Medicine, suggested a distinct advance in this direction. He advises that in cases of outbreaks of infectious disease upon vessels disinfection should be performed on board during the voyage. The patients should be promptly isolated and all infected articles disinfected by means of steam under pressure. In order that this may be efficiently accomplished, every passenger vessel should have a physician subject to the orders of the Government authorities and independent of the navigation companies. M. Proust points to the success of the plan proposed by him, on the "Mytho," a French transport from Tonquin, upon which cholera was stamped out by sanitary measures during the voyage.

The lack of care exercised by trans Atlantic steamship companies concerning the importation of small-pox and other contagious diseases, calls forcible attention to one of the points in M. Proust's paper; namely: that relating to the independence of steamship physicians. It is certain that if the medical officers of the trans-Atlantic steamship lines derived their authority from government instead of from the steamship companies, the landing of cargoes of living small-pox, yellow fever and cholera material upon our shores would be very much diminished, and inland State and City boards of health could look with more equanimity upon the sanitary shortcomings of the quarantine establishments at most of the Atlantic seaports.

FINAL DISPOSAL OF GARBAGE AND SEWAGE.

Intimately connected with the question of public disinfection is that of the disposal of the refuse of cities—garbage in the widest sense. In this field decided advances have been made. On the one hand new methods for the inoffensive destruction of city wastes have been devised, and on the other, older methods whose utility has been disputed, have had their value confirmed by a large amount of concurrent evidence.

"Purification by fire" has been for some years the *mot du guét* with many sanitarians. And there can be no doubt that crematory destruction of garbage is absolute so far as noxiousness of the residue of

the material so treated is concerned. But although the successful adoption of the system of garbage cremation by the municipalities of Montreal, Canada, and of Wheeling, West Virginia, has given this method a boom in State Medicine circles, it is absurd to make the claim that it is the only safe and effectual means of disposing of city offal.

The final disposal of sewage (fecal matter and house wastes by the separate system of sewerage; or these *plus* storm water and street washings by the combined system) has long been an intricate problem in sanitary administration. The self-interest of municipal corporations that for mercenary considerations empty their refuse into a stream which may be or become the source of water supply for their neighbors must be checked. We have in this country an example of the offender confessing judgment and putting a stop to the practice on the moral ground of its unrighteousness; thus proving that corporations are not always soulless.

The irrigation system of sewage disposal which has steadily won favor among American sanitarians in recent years, has been greatly extended in Germany during the past year. In Berlin, where it has been in operation for some time, it has given great satisfaction. That portion of the city from which the sewage is carried to the irrigation fields has a population of nearly nine hundred thousand or about two-thirds of the whole. The water drained from the irrigation fields is submitted to a chemical examination every month. For the year ending March 31, 1885, only a single instance occurred in which the analysis showed marked pollution. This was afterward ascertained to be due to too rapid percolation of the sewage at one point, resulting in a direct mingling of the sewage with the "filtered" water. In 1885 there were 5,374 hectares (13,275 acres) of land used as sewage farms by the Berlin municipality. The proportion of inhabitants estimated to each hectare is 240; (about 100 to the acre). At this rate the above number of acres would be nearly sufficient to dispose of the sewage of the entire population of Berlin by irrigation. In Danzig, on the shores of the Baltic, where the soil is sandy, one acre suffices for the sewage of 240 people. In this city sewage irrigation has been practised for fourteen years. The coldest weather does not interfere with the irrigation. From February 23 to March 4, 1886, the temperature varied from 21° to 13° F. without checking the process of irrigation. The low temperature of our winters is sometimes cited as an objection to the introduction of the irrigation system in the Northern and Western portions of the United States, but this experience of the city of Danzig, corroborated, as I am informed, by that of Pullman, in Illinois, and of other places in this country invalidates the objection.

In Breslau, Germany, a city of about 300,000 inhabitants, the irrigation system has also been adopted. At the close of last year about 1,600 acres of land in the vicinity of the city were under cultivation for sewage farming. The system, which is being gradually extended, is very popular. There are now nearly 6000 premises connected with the sewers. The cost to each householder so connected, is less than the former method of removing fecal matters, and as the number of sewer connections increase, the cost to each property owner is proportionately diminished.

In some other German cities, where the physical or topographical conditions render the irrigation system impracticable, chemical precipitation of the sewage is practiced. Various methods of chemical purification are in use in Frankfort, Wiesbaden, Halle, Essen and Ehrenfeld, and all seem to be more or less successful. Most of them have only been in operation during the past year so that nothing definite can yet be said about their ultimate success. It is said that the cost per head is about the same as that of well administered irrigation fields. A board of distinguished engineers has recently advised the adoption of this system by the city of Providence, Rhode Island.

The principal difficulties encountered in the management of chemical purification systems are the nuisance created during the sedimentation of the solid portions, and the disposal of the manurial product to advantage. The same objections are urged against the various pneumatic systems, which seem to have made no progress in the favor of sanitarians abroad during the past year.

In England the irrigation system has been in use for many years and has given general satisfaction. The city of Birmingham, with over 600,000 inhabitants, has adopted it, and with a daily discharge of sixteen million gallons of sewage finds an area of twelve hundred and twenty-seven acres of land "amply sufficient" for the purpose of an irrigation field. The income realized during 1885 from the sale of stock and produce from the sewage farm amounted to over $100,000.

POISONOUS AND ADULTERATED FOOD.

The brilliant discovery of a new and very poisonous ptomaine in certain cheese by Prof. Victor C. Vaughan, of Michigan, several years ago has been followed by the demonstration of the same substance in ice cream, which had produced symptoms of poisoning in a large number of persons who had partaken of the cream. Subsequently Dr. Vaughan discovered the same poison in milk kept for a time in his laboratory. On experimenting with the substance Dr Vaughan found that it reproduced itself, and hence concluded, apparently with good reason, that it was the product of some micro-organism, which has, however, not yet been isolated. This ptomaine, which Dr. Vaughan named tyrotoxicon, has also been found by Drs. W. K. Newton and Shippen Wallace in milk which produced poisonous symptoms in seventy-three persons at a New Jersey summer resort. All other sources of poisoning were rigidly excluded.

Prof. Shearer, chemist to the Iowa State Board of Health, has isolated this poison from samples of milk which had produced poisonous symptoms. He also found the poison in the vomited matters of persons taken sick in an outbreak of milk poisoning, at Corning, Iowa.

Dr. Vaughan has suggested that tyrotoxicon may be the active cause of cholera infantum. He has reported a case of this disease in which the agency of the poison in its causation seems very probable. The matter is of such great importance in view of the immense annual mortality from cholera infantum in this country, that it deserves careful study.

In this connection it may not be superfluous to point out the apparent causes of the development of the poison in milk. In the outbreak studied by Drs. Newton and Wallace, it was elicited that "the cows had been milked at the very unusual hours of midnight and noon, and the noon's milking—that which alone was followed by illness—was placed while hot, in the cans, and then, without any attempt at cooling, carted eight miles during the warmest part of the day in a very hot month" (August).

In view of the fact that Dr. Vaughan will himself fully describe the chemical properties and physiological action of tyrotoxicon in a paper to be read before the Section on State Medicine, I may omit any further comment upon this subject here.

Closely connected with this question of poisonous food is that of food and drug adulteration. Many persons think that the assertions of sanitarians in regard to adulterations are overdrawn, but the experiences of the Massachusetts and New York State Boards of Health, contain evidence, not only as to the extent of the adulterations, but also that systematic inspection and analysis serve to diminish the practice. Of 2858 articles of food and drugs tested in Massachusetts during the first five months of 1886, 1135 were found to be adulterated or defective. Of 91 samples of "olive oil," 68 were spurious. Vinegar was found to be below the legal standard of 4½ per cent. of acetic acid in 69 out of 116 samples. Temperance drinks all contained alcohol, some over 40 per cent., and cures for the opium habit contained opium in nineteen cases out of twenty. The last is called in the advertisement, "double chloride of gold," but the chemist sought for the precious metal in vain in the preparation. Mustard was found to be adulterated 124 times out of 211 samples; white pepper, 63 times out of 128 samples; black pepper, 41 out 71; mace, 29 out of 45. Out of 9 samples of horseradish one was found to be genuine, the rest sophisticated. Molasses is "doctored" with chloride of tin, which precipitates the coloring matter and leaves the syrup of a lighter color. The poisonous precipitate is sold to the candy makers. Every one can draw his own conclusions as to the results of this practice. Citrate of iron and quinine sold in New York State contained from 3⅓ to 11¾ per cent. of quinine, instead of the 12 per cent. demanded by the Pharmacopœia. 8 out of 21 samples examined contained less than 9 per cent. and 4 had less than half the proportion required by the Pharmacopœial standard. Other drugs were found similarly deficient. In view of these facts is it any wonder that physicians so frequently fail to obtain the results from medicines which they had been led to expect by previous personal experience or the observation of others?

In Germany, sanitarians are demanding that the general Government shall take cognizance of this evil and establish public laboratories where analysis of suspected articles can be made, and if found sophisticated, the dealer punished. In this country the good work being done by the State Boards of Massachusetts and New York should be imitated in all the other States. By constantly agitating this matter, the public will finally be awakened to efficient action.[3]

The question whether salicylic acid is harmful when added to alimentary substances as a preservative has been decided in the affirmative by a commission of the French Academy of Medicine. Prof. Brouardel, in supporting the conclusions of the commission, said that salicylic acid was most dangerous in atheromatous subjects, in old people, and in those in whom the kidneys did not act well. He advised that its use as a food preservative be proscribed. The Academy adopted this recommendation. I have been informed that the use of salicylic acid for the above mentioned purpose is extensive in this country. Health authorities might with advantage take note of the recent conclusions of foreign scientists upon this subject.

PUBLIC BATHS.

No argument should be necessary to show the importance of bodily cleanliness in the preservation of health. Free public baths have long been advocated by sanitarians, but, except in a few places, the difficulties to their general introduction have hitherto seemed insurmountable. It is easily seen that tub baths are out of the question where large numbers of people are expected to use the bathing facilities, both on account of the high first cost and the difficulties and expense of administration. It is manifest, however, that public, like private, bathing institutions must make provision for individual baths. Large pools, in which many persons bathe at once, fail to answer the requirements of sanitary science, or of public decency.

The difficulty of furnishing an individual bath for public use was first surmounted by a French army surgeon, Dunal by name. He devised a shower bath which was introduced in one of the barracks at Marseilles. This was soon imitated at other military posts in France, and at present the new French military barracks are generally supplied with a modification of the Dunal shower bath. In the German army the same system has been adopted, and now every German soldier in barracks is required to bathe every week, the military authorities furnishing the necessary facilities: bath room, warm water, soap and towels. In circulars No. 4, S. G. O., 1871, and No. 8, 1875, Dr. John S. Billings, U. S. A., recommended the introduction of suitable bathing facilities in our own army, and in the last named publication gave an

[3] In this connection I would call attention to the following official announcement, found in a recent German journal. It shows that a paternal government, against which we are somewhat accustomed to declaim in this country, may have some good points.

"Under the name '*Warner's Safe Cure*,' a brown liquid contained in flat bottles holding about 500 grammes, is recommended as a remedy against kidney diseases and sold at four marks per bottle.

"The official analysis, and the statement of a resident apothecary who sells the preparation, have shown that the article consists principally of American Wintergreen, and that its highest value is not over two marks.

"This notice is published for the information of the public.

"*The President of Police*, BARON VON RICHTOFEN.

"Berlin, March 30, 1887."

illustration of a simple but efficient bath on the Dunal system, as used in the prison at Rouen, France. The suggestion has, however, never been acted upon by the U. S. military authorities, as the question of baths for the men is left to the discretion of the post commanders. In the United States Navy, likewise, where the system could be adopted with the greatest ease, and doubtless often with benefit, no general movement toward it has been inaugurated.

The amount of water necessary for a thorough cleansing effect with the German soldiers' bath does not exceed, according to the statement of Surgeon-General Roth, of the German Army, two gallons. With the aid of a piece of soap and a little friction, a much better cleansing is obtained than when a thirty gallon tub bath is used.

It is evident that if this form of bath is the best and most economical for soldiers, it is likewise good for the civil population. With this thought in his mind, Dr. Oscar Lassar, of Berlin, had a bath of this sort constructed in the hygienic exposition in Berlin in 1883, where it seems to have attracted much attention and given general satisfaction. In a space 16½ × 40 feet sufficient room was obtained for ten baths with all the accessories of a bath house, office, heating apparatus, drying room for towels, dressing rooms, etc. At the meeting of the German Public Health Association last year, Dr. Lassar urged the extension of these baths to the civil population, in order that every German, as he puts it, "may have his weekly bath." Dr. Lassar found that bathing establishments accessible to the public, (not free), are distributed throughout Prussia in the proportion of one bathing place to 38,000 inhabitants.

Incidentally, Dr. Lassar gives an excellent illustration of the sanitary value of free baths in some industrial pursuits. At the white lead works of Hospelt, in Ehrenfeld, there are eighty persons employed, who are required to bathe every week. Towels, soap, and all facilities necessary are furnished by the proprietor of the works. While the workmen appreciate the baths as a luxury, and make constant use of them, the proprietor reports a highly gratifying improvement in the health of the employes since their introduction. In the first year of the use of the baths (1884), the number of cases of sickness was diminished 20 per cent., and in the following year the reduction seems to have reached 50 per cent. Lead colic, especially, has become much less frequent than formerly. In the dye works of Heyl Brothers & Co., near Berlin, the firm have constructed a public shower bath of ten rooms or "cells," which is free not only to the workmen and their families, but apparently to any one that desires to make use of it. The proprietors say the baths have been of the greatest benefit to the workmen, and they express the hope that their action will be extensively imitated. The municipal government of Paris has recently authorized the erection of three large public bathing establishments in that city. Each of these is to contain a large covered pool, provided with constant in and outflow of water, which is to be heated to the required temperature in the winter season. The prices to be charged are three cents per bath to schoolboys, five cents to schoolgirls, and five cents to the general public. One of the baths is to be more handsomely furnished and the charge will be a little higher, in order to cover the expenses of the other two. The exhaust steam or condensed water from three large steam boiler plants belonging to the municipality will be used for the purpose of heating the water. The item of cost, although small, will, however, limit these institutions in the good they can accomplish, looked at from a sanitary point of view.

The establishment of free baths in connection with public schools was first suggested by Dr. Carpenter, in 1877, but was not, so far as I am aware, put in practice until two or three years ago. when the Mayor of Göttingen, the famous German University town, decided to introduce it into the schools. The population of Göttingen is about 21,000, and about 3,000 children attend the public schools. The baths are fitted up in the basement of one of the school-houses, where two apartments, each 8 feet 3 inches by 17 feet, were constructed, one being used as a dressing room and the other as the bath room. The walls are white-coated and the floors are asphaltum. The heating of the basement, and of the water required for the baths, does not add much to the expense of heating the building.

The baths consist of three shower baths with shallow zinc basins, 1 metre (40″) in diameter. The children are bathed during school hours, and the process requires so little time that a class of fifty can bathe in about one hour. Every child attending school has the opportunity of bathing once in two weeks. The children bring soap and towels with them from home. The baths are in use throughout the year. At first, this novel feature of school administration did not commend itself to the favor either of the children or their parents; but less than two months after the introduction of the baths, 75 per cent. of the children took advantage of the opportunity offered. The authorities and teachers are unanimous upon the point that the system is of great benefit to the children, not only from its direct sanitary advantage, but from the habits of cleanliness formed, to which they are likely to adhere through life.

The great sanitary importance of cleanliness has led me to make some investigations into the facilities for bathing enjoyed by the working people in this country. With this end in view, I addressed a circular letter to the Mayors of ninety-two cities, asking information upon the following points, viz.: The existence of free public bathing establishments, their number, time when open during the year, and the extent to which they are used by the public. Also the total number of residences and of buildings furnished with private baths in each city. From the answers received tables 1 and 2 give a summary of those available for statistical purposes. From table 1 it will be seen that the bathing facilities for the lower classes are absurdly insufficient, Boston making the nearest approach to an attempt to fill the want. Even here, however, the poor laborer who has no bath tub at home, and is unable to pay the charges at a public bathing establishment, is deprived of this sanitary necessity during eight months of the year.

TABLE I.

CITIES IN UNITED STATES HAVING FREE PUBLIC BATHS.

	No. of Bathing Establishm'ts	Time during which the baths are in use.	No. of persons using baths.
Boston, Mass,	17	June 1 to Sept. 30.	959,765 in 1886.
Brooklyn, N. Y.	3	June to October.	225,885 in 1886.
Buffalo, N. Y.	(?)		Not very generally used
Cleveland, O.	1		Little used.
Hartford, Conn.	1		Very extensively used.
Philadelphia, Pa.	5	June 25 to Sept. 26.	581,771 in 1886.
New York, N. Y.[1]	15	June to October.	3,431,086 in 1883.

[1] Not from official reports.

TABLE II.

CITIES IN UNITED STATES NOT HAVING FREE PUBLIC BATHS.

	No. of Houses in City.	No. of Homes supplied with Bath Tubs.
Baltimore, Md.	70,000	20,000
Bridgeport, Conn.	6,000	2,000
Cambridge, Mass.	9,398	2,315
Charleston, S. C.	10,000	500
Cincinnati, O.	33,471	6,000
Lancaster, Pa.	5,600	1,000
Lynn, Mass.	5,800	1,238
Milwaukee, Wis.	25,000	3,000
Minneapolis, Minn.	17,000	3,000
New Bedford, Mass.	5,237	597
Peoria, Ill.	7,600	800
Portland, Me.	7,188	1,153
Reading, Pa.	11,000	1,900
Savannah, Ga.	6,000	4,000
Somerville, Mass.	2,000	500
St. Louis, Mo.	50,000	8,000
St. Paul, Minn.	30,000	10,000
Wilmington, Del.	12,000	5,000
	313,294	71,003

That a very large proportion of the inhabitants of our cities are deprived of proper bathing facilities is shown by table 2. Eighteen cities from which available statistics were received show that only about twenty-three per cent. of residences are supplied with bath tubs. Taking into account the difference in the numbers of persons occupying houses inhabited by the poor, and by those in easier circumstances, we may estimate that five sixths of the inhabitants of these cities have no facilities for bathing except such as are afforded by pail and sponge, or a river, lake or other body of water which may be easily accessible. In winter, even these sources of cleanliness are cut off.

I need not detain you to point out that this absence of the facilities for keeping clean is a crying evil which demands the attention of sanitarians, physicians, and in fact, all intelligent people. All are equally interested. Dirt is not only a source of disease, but probably no less a factor in the promotion of crime. I may quote here with my full endorsement the enlightened opinion of the Mayor of Reading, who says: "I am persuaded that uncleanliness produces immorality and crime, for in proportion to the decrease of personal importance which an individual experiences, is he lost to the legal restrictions about him. Beclouded faces drive men from the light, and darkness breeds dangers of all kinds; so that apart from sanitary benefits, public baths would in my estimate reduce crime." I quote these words with the more pleasure, for public officials do not often bother their minds with sociological problems.

As to the arrangement of a free public bathing establishment, I agree with Lassar that the spray bath of the Dunal type, with such modifications as a more extended experience in the German army has suggested, would better fulfil the demands of sanitarians than the pool bath so generally used in these institutions. The individual spray bath is more cleansing, each person bathes in absolutely clean water—at least as pure as the supply can furnish—and the privacy secured to each bather, both in the bath and dressing room, would tend to the maintenance of morality and self respect. The economy of the spray bath, both in first cost and in administration, likewise points to it as the bath of the future especially for public purposes.

I would urgently press upon your attention the great sanitary and social importance of this reform.

SOME RESULTS OF SANITARY MEASURES.

In determining the results of sanitary measures, errors of observation, or of inference are very liable to creep in and vitiate our conclusions. However, in a number of instances, after making all reasonable allowances for such errors, we may conclude that a reduction of the usual death rate of a place following upon the enforcement of sanitary measures, and continuing during the time such measures are carried out, is fairly due to the agencies mentioned. As a fit conclusion to this summary of progress, I have thought it not inappropriate to group together a number of instances where the inference that the improvement was due to sanitary measures seems justified by the evidence upon record. I have already called attention to the fact that in the State of Michigan the saving of life during a period of efficient sanitary administration amounted to 3,718 lives from a single disease (scarlet fever) in eleven years, or 338 per year.

In a communication to the Michigan State Medical Society on May 13, 1887, Dr. Baker gives some suggestive statistics showing the results of isolation and disinfection in restricting diphtheria. There were in 1886, 461 outbreaks of diphtheria in Michigan, exclusive of Detroit and Grand Rapids. In 243 of these it is uncertain whether any measures of isolation or disinfection were taken. In 102 outbreaks isolation and disinfection were both neglected, and in 116 outbreaks isolation and disinfection were both enforced. The sequels of these outbreaks were as follows:

In the total of 461 outbreaks there were 3,085 cases and 656 deaths, an average of 6.69 per cent. of cases and 1.42 per cent. of deaths. In the 243 outbreaks where it is doubtful whether proper restrictive measures were taken, the cases were 1,103, with 250 deaths, an average of 4.54 of cases and 1.03 of deaths. *In the 102 outbreaks where no measures were taken, the cases numbered 1,650 and deaths 329, an average of 16.18 per cent. of cases and 3.23 per cent. of deaths.* Contrasted with this, we have *116 outbreaks in which both isolation and disinfection were enforced, with only 332 cases and 77 deaths, an average of 2.86 per cent. of cases to each outbreak and only .66 per cent. of deaths.* Dr. Baker points out

that according to these statistics 1,545 cases and 298 deaths from diphtheria were prevented during the year 1886, in his State. If these results do not show conclusively the effects of appropriate sanitary measures, then figures are most abominable liars.

In Great Britain, it is estimated by Dr. Ogle that sanitary improvements have had the effect of adding 1.44 years of life to every male, and 2.77 years to every female in England and Wales, and Mr. Edwin Chadwick is quoted as saying that "the changes in the death rate have given to the community an annual addition of 1,800,047 years of life shared among its members; and allowing that the changes in the death rates are the direct consequence of sanitary interference, we must regard this addition of nearly two million years as an annual income derived from the money invested in sanitation." If we put this saving of life in round numbers, we find that in the five years 1881-5, there has been an annual saving of the lives of 62,000 persons in England and Wales, which would have been lost in default of the sanitary measures enforced. Capt. Douglas Galton estimates the annual saving of life in Great Britain in 1880-84 at 102,240. This is on the assumption, of course, that no other causes could or did produce this saving of life. It is greatly to be regretted that in this country we have no such system of vital statistics as will enable us to "take an account of stock," which would show whether we are making similar progress. But, if we could do so, such a reduction in the death rate among our 60,000,000 people would show a saving of the lives of 144,000 persons per year. Certainly this is worth striving for.

In Holland a law to restrict the spread of infectious diseases went into effect in 1872. Comparison between the mortality before and since that year shows that there has been a decrease in the number of deaths from typhoid fever, small-pox, scarlet fever, measles and diphtheria. The measures relied upon were isolation and disinfection.

When we reflect that in the year 1885 there were 2,374 deaths from measles and scarlet fever in the State of New York, the inquiry presents itself forcibly whether a rigid system of notification, isolation and disinfection carried out under the authority of an efficient health officer, could not greatly reduce and in time wipe out the mortality from such purely contagious diseases.

Another instance showing the effectiveness of prompt isolation and disinfection in stamping out a beginning epidemic, is afforded by the incident of the outbreak of yellow fever at Biloxi, Miss., last summer. The measures taken have been already pointed out in sufficient detail on a preceding page.

In my native city of Baltimore, it is claimed by the health department that certain infectious diseases have been reduced markedly since the introduction of a thorough system of plumbing inspection. During the same time, however, isolation and disinfection have been more thoroughly practiced, and doubtless most of the good results are due to these features of the sanitary administration.

In Memphis, which has for six years past been the cynosure of all sanitary eyes in this country, the improvements, initiated by the National Board of Health, and so efficiently carried out by the local board under the presidency of Dr. George B. Thornton, have resulted in reducing the total death rate from 35 per thousand to 23.80 per thousand.

In this great metropolis of the West, whose bountiful hospitality we are now enjoying, I find it stated that during the last five years the death rate has decreased from 25.69 per thousand to 19.46 per thousand, an apparent net saving of 17,214 lives in that period, due probably to the enforcement of sanitary measures. Other instances of the same sort could be cited. I have quoted the above merely to point out the way in which, it seems to me, the practical sanitarian should direct his forces in the struggle with communicable diseases. First of all the health authority must ascertain the presence and locality of every case of contagious or infectious disease. This can only be done by requiring the physician to promptly report every such case that comes to his professional knowledge. I am quite aware that many physicians contest the right of the State or municipality to exact compliance with laws requiring them to report such cases. Some contend that such notification is a violation of professional secrecy, but the majority object because the State offers no pay for service performed. The latter objection seems to me valid; physicians do not owe the State gratuitous service, any more than do other professions. The ethical objection appears to me the height of absurdity. I beg leave to quote upon this point the remarks of Dr. Ezra M. Hunt: "If Boards of Health," says Dr. Hunt, "have as one of their objects the prevention of the extension of communicable diseases, it would seem to follow as a corollary that they have the right to know where such diseases exist. It is a parody on ethics to class as professional family secrets, the concealment from a health officer that there is small-pox in Mr. A's family, or that Mr. B's children are having the scarlet fever or diphtheria. Nor can any judicial decision be found to sustain any, who, under the assumption of an invasion of personal rights, claim that the law has no right to obligate those in attendance upon cases of contagious disease to help guard the public health."

The *first* requirement then in dealing with infectious diseases from "a State Medicine point of view" is *notification*, and inasmuch as such notification will never be effective if voluntary, it must be made compulsory.

The *second* requirement in restricting the prevalance of such diseases is the segregation of patients, and guarding healthy individuals, except the immediate attendants, from contact with them. This is evident to all intelligent persons at first thought.

The *third* requirement is prompt and thorough disinfection, in other words, the absolute destruction of the infective properties of infectious matter, in whatever that may consist. For a number of diseases the infectious material itself, as well as the modes by which it is given off from the patient or communicated to healthy persons are known. For others we may venture a probable guess.

Recent studies upon disinfectants have pointed

out those which are trustworthy, and removed difficulties in their practical application.

I would therefore declare the watchwords of the practical and progressive sanitarian in dealing with communicable diseases to be these three: *Notification, Isolation, Disinfection.*

NOTE.—Near the end of May, 1887, yellow fever broke out in Key West, Fla., but had not assumed the dimensions of an epidemic at the date of delivery of this address.

ORIGINAL ARTICLES.

ERYSIPELAS OF THE PHARYNX AND LARYNX, EPIDEMIC AND SPORADIC.

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OF ALEXANDRIA, VA.

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The etiology of this affection is somewhat obscure, and its medical literature rather scanty. The disease has appeared in the United States and Europe in certain localities, both in epidemic and sporadic form. Like all erysipelatous affections, it possesses contagious properties. But the most frequent cause appears to be some mysterious epidemic influence which invades certain localities and sections, expends its septic properties, and probably disappears never to return in the same region. In a certain limited district in my knowledge, erysipelas of the throat of a very malignant type prevailed some thirty-two years since. I am not aware that it has ever returned to that particular locality.

Epidemic erysipelas of the pharynx, because of the peculiar dark appearance of the tongue, has in certain districts received the appellation of "black tongue." In other localities it has popularly been termed "choke disease," because of the rapid tendency to suffocation, from the glottis and epiglottis becoming suddenly involved in the œdematous process. It has also been designated by some as "malignant sore throat," because of the immense fatality attending the disease. That epidemics of erysipelas attacking the throat exclusively may appear in particular districts, run their course, and finally disappear, is an occurrence which has been repeatedly witnessed. At other periods, epidemics of erysipelas of the external surface may prevail, during which a limited number of cases may occur in which the disease may attack the throat alone. I am inclined to the belief that an ordinary case of tonsillitis, occurring during the prevalence of a very positive tendency to epidemic erysipelas with a septic condition of the atmosphere, would very readily become septic in character and assume the form of erysipelas, just as we observe a wound become erysipelatous when a decided tendency to that type exists, and presenting what we term traumatic erysipelas.

Symptoms.—In the initiatory stage of erysipelas of the pharynx, the entire mucous surface of the velum, uvula, tonsils, root of the tongue and post-pharynx is observed to be red, highly engorged, dry and puffy. The distressing burning pain is usually very great. The difficulty of deglutition from stiffness of the structures, even at this stage, is very considerable. The rapidity of progress of the inflammatory action, swelling and œdema, from this stage, is something marvellous, and constitutes a marked and distinctive feature of the disease. No other local affection within my knowledge pursues invariably so rapid a course towards a fatal termination. Within from six to twelve hours the respiration becomes difficult, stertorous, and gurgling. The voice at this stage becomes whispering, and then completely obliterated. Then follow suffocation and death.

Previous to these changes in the functions of the parts, the swelling and œdema of the structures in the pharynx, the glottis and epiglottis, assume enormous proportions. The root of the tongue being also involved in the erysipelatous affection, the organ, from compression of its venous circulation, assumes a dark, livid, dry appearance, and occasionally protrudes somewhat from the mouth.

The cavity of the pharynx, if any portion can be seen, is observed to be one indistinguishable red, swollen mass, without any defined boundaries, or anatomical features. Under these circumstances it is impossible to obtain a view of the glottis or epiglottis, but the impaired state of the voice and its gradual abolition, and the painful difficulty of respiration, would indicate the excessive œdema of those organs. In the cases seen the febrile reaction was not high; while the pulse usually varied from 100 to 120, and was usually feeble and compressible

Diagnosis.—Erysipelatous affection of the fauces, in my experience, never causes membranous exudations on the mucous surface attacked. It can, therefore, always be easily distinguished from the diphtheritic form of disease. Its wonderfully rapid development and progress, the excessive swelling and œdema, and invariable extension towards the larynx, at once distinguish the disease from amygdalitis. From simple laryngitis it differs in the fact that erysipelas always begins in the structures of the pharynx—the tonsils, velum, uvula, and posterior portion of the tongue, and progresses downwards. From simple glossitis, which is often very rapid, erysipelas of the throat differs in the presence of the enormous inflammation and swelling of the faucial structures peculiar to the latter affection, and entirely absent in the former.

The increase of inflammation and swelling in erysipelas of the pharynx is more alarmingly rapid than in any disease of my acquaintance; and the loss of voice and difficulty of respiration are correspondingly great.

The disease may be diagnosticated from scarlet fever by the appearance of the tongue, which is rather of a pale, livid appearance in the beginning, and ultimately becomes swollen and of a dark livid color, differing materially from the scarlet red "strawberry tongue" of scarlatina. The sense of impending suffocation is, in the advanced stages, always sufficiently great to cause an infinite degree of mental and physical distress and suffering.

Prognosis.—The prognosis of erysipelas of the throat is of the gravest character. Without speedy and prompt relief a fatal termination will invariably

ensue. The rate of mortality has not infrequently attained 90 per cent. From 70 to 80 per cent. is frequent.

Treatment.—Twenty-nine years ago the first case of erysipelas of the pharynx and larynx came under my professional observation. The history of the case may be summed up in the following brief statement: The patient was a young man of 19 years, of good family, but having a hereditary disposition to tubercle. He was attacked in the night with what was supposed to be an ordinary tonsillitis. But in the course of four hours the inflammation of the structures of the pharynx had become very great and the deglutition almost impossible, while the difficulty of breathing had become distressing. The voice, even at this stage, showed indications that the vocal organs were beginning to participate in the trouble. By 7 A.M. the patient was in extreme danger. The voice, previously reduced to a mere whisper, was now entirely obliterated. The respiration was stertorous, at times gurgling, and exceedingly labored and distressing. The complexion was livid. The interior of the pharynx, when the livid and swollen tongue was depressed, presented the appearance of a solid red mass, without anatomical outlines. The enormously swollen tissues had encroached upon the openings of the posterior nares, throat and glottis to such an extent as to very nearly close them. At this stage the patient was threatened with asphyxia, as the larynx had manifestly been involved by the erysipelatous disease, in addition to the obstructions existing in the posterior nares and pharynx. The patient now suffered from extreme and painful difficulty of breathing and great restlessness. The face and complexion of the hands became almost livid; the pulse frequent and feeble; the skin cool. The swollen tonsils and palate were freely scarified, with the expectation that the local depletion might reduce the œdema and relieve the distress. It failed to give any alleviation whatever. Nitrate of silver was also liberally applied, but without benefit.

The patient being now entirely unable to swallow, no internal treatment could be resorted to. In consultation, as a *dernier ressort*, tracheotomy was proposed. This was opposed obstinately by the friends of the patient. Determined to give my patient another chance for life, and suspecting that this throat affection was erysipelatous in nature, from the fact of a prevailing tendency to that affection existing at the time, I decided in this case, as a mere experiment, to resort to extensive counter-irritation by some agent that was speedy, prompt, efficient, and at the same time harmless in character, hoping thereby to induce extensive dilatation of the cutaneous capillaries and a transference by metastasis of the erysipelatous action to the surface. The sinapism was selected as the counter-irritant to be used in this case. The entire neck, front of the chest, and back, corresponding to the scapulæ and upper part of the spine, were speedily covered or enveloped in strong, freshly prepared sinapisms. In ten or fifteen minutes the sinapisms began to act. In thirty minutes the burning pain over the entire surface enveloped became almost intolerable. Then, for the first time, the patient began to experience some relief to the obstructed respiration. Increased relief was now experienced every minute, and corresponding improvement of respiration. On removal of the sinapisms, it was found that the entire surface of the neck, front of the chest, and upper dorsal region, was covered with a universal deep red blush. The relief to the respiration was now such as to enable the patient to inhale sufficient air to sustain life for the time. Equally remarkable and pleasing were the local changes in the fauces. There was a manifest subsidence of inflammatory action and œdema of the structures involved. Within a few hours a very extensive attack of erysipelas had been developed over the chest and a portion of the lower neck.

The effects of this development upon the disease of the pharynx and larynx, and tongue, was truly marvellous. The internal affection had almost completely subsided, the difficult respiration was relieved, the internal affection transferred by metastasis to the external surface, and the life of the patient saved.

This peculiar feature of this case serves to illustrate in a remarkable manner that inherent characteristic of erysipelas to change its location, by metastasis, from one organ to another. This very interesting fact also furnishes an intimation of value in our treatment of the disease when attacking vital or important internal organs, that relief may be attained by encouraging this tendency by means of counter-irritation. Prompt, speedy, effectual counter-irritation by means of sinapisms extensively used, was found to act most favorably in every respect. Such counter-irritants as epispastics, ammonia, oil of turpentine, are inadmissible, because they may establish inflammatory action sufficiently violent in type as to cause gangrene of the skin.

I regard it as exceedingly fortunate in this case that tracheotomy was not resorted to. If such had been the case, then erysipelatous inflammation would surely have attacked the tracheal wound. Tracheotomy is manifestly an operation not suitable to erysipelas of the fauces. Since the successful treatment of this case by means of counter-irritation, I have resorted to the remedy not only in all cases of the genuine disease, but also in all cases presenting indications of an erysipelatous tendency involving the faucial surface; and always with benefit. In true cases of this kind, the remedy will always bring out a crop of erysipelas on the surface. Prompt and extensive counter-irritation by means of sinapisms applied thoroughly around the neck, over the chest and back, covering the scapulæ, was found by myself and three medical friends to whom the practice was suggested, so as to produce dilatation of the cutaneous capillaries on a widespread scale, and thereby inviting the flow of a large amount of arterial blood from the internal structures to the surface, to act manifestly as an important diversion of the circulation, and form a positive diverticulum which invariably, according to our experience, afforded speedy relief to internal disease, and saved life. A medical friend in a distant section of this State, which was infected with erysipelas of the fauces of an exceedingly malignant type, who, on my suggestion, applied this

simple method of treatment to his patients, informed me that the most favorable results followed, in almost every case, after its application; whereas previously the results, under other treatment, were almost invariably fatal.

In certain cases which have come under my observation during the prevalence of erysipelas having many of the characteristics of erysipelas, but wanting in others, I have also found this thorough method of counter-irritation to act exceedingly favorably in relieving the enormous congestion and inflammation of the faucial structure. While in this class of cases there was no appearance of erysipelas on the surface following the counter-irritation, the irritation of the skin being very extensive afforded relief to internal trouble. In these cases of metastasis of erysipelas from the fauces to the skin, caused by the action of the counter-irritant, all local means of treatment should be desisted from, because of the known tendency to migrate. The tincture of the chloride of iron, hydrochloric acid, chlorate of potash, and the liquor arsen. chloridi may be used advantageously internally.

Case 2.—An adult, aged 40, was attacked with an affection of the throat, supposed to be acute tonsilitis, but what in a few hours proved to be a dangerous attack of erysipelas of the pharynx and larynx. The œdema and inflammation of the faucial structures became enormous, so as in a few hours to endanger respiration. The breathing became first of a snoring character, then stridulous, finally muffled, and almost indistinct, because of the great obstruction. At this stage the tone of the respiratory murmur throughout the chest also became exceedingly feeble, indicating a deficiency of inhaled air. The tongue and skin assumed at this stage of the case a decidedly livid appearance. The pulse was feeble and frequent, and the extremities rather cool. In this case the same system of extensive counter-irritation was resorted to as in the former, and with equally favorable results.

In erysipelatous affections attended with great rise of temperature, with delirium and a tendency to cerebral complications, I have for some time past used salicylate of soda, and more recently with still better effects, the salicylate of ammonia. While my experience in the use of this remedy is not extensive, it is sufficiently so to establish in my estimation its merits as a valuable agent in the treatment of this peculiar type of the disease.

Cerebral complications of erysipelas are usually regarded as examples of metastasis to the brain. I regard this view of the case as questionable. In those cases of cutaneous erysipelas involving the brain, there is certainly no subsidence or disappearance of the external affection, while the internal affection may continue to increase in gravity. All cases of this kind seen by me, I have had good reason to regard as true examples of embolism of some of the cerebral vessels, occurring first at a circumscribed spot, or locality, the effects of this gradually radiating in the form of engorgement and inflammation, and ultimately producing an area of morbid action, often of an extended character, which may terminate in softening or suppuration. I am not aware that any treatment heretofore instituted has been able to reach this class of cases; certainly the authors have given us none. In the past few years, in a few cases threatening cerebral complications in which I had reason to suspect a tendency to embolism, I have prescribed with decided benefit the salicylate of ammonia in gr. xx doses every three hours, and the mistura ferri et ammon. acetatis in ℥ss doses in connection with it, also every three hours. This is a far better treatment in this class of cases than the traditional tinct. of chloride of iron and quinine. The therapeutic action of the salicylate of ammonia is eminently antiseptic, acting specifically on the septic form of inflammation, and when combined with the carbonate of ammonia, I believe it promises more for the dissolution and removal of emboli than any other agent. It has proven to be, in my hands, an efficient antipyretic.

In conclusion, I can say truthfully, that in the treatment of erysipelas of throat, time is a precious and vital consideration. Local applications of iodine, nitrate of silver or simple astringents, are worse than useless; they are deceptive. The internal administration of quinine and iron is impotent for good. We want some agent which will produce promptly and efficiently an extensive counter-irritation, and sudden dilatation of the cutaneous capillaries over the seat of the internal erysipelatous affection, thereby relieving the enormously engorged structures and preventing closure of the glottis. In certain cases, accompanied with excessive œdema of the cellular tissue of the neck and adenitis, I have found the flaxseed poultice thoroughly covered with mustard, applied very hot and frequently renewed, to exert an admirable influence in reducing the adenitis and œdema.

ANTIPYRIN IN RHEUMATISM; ITS VALUE AND MODE OF ACTION.

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PROFESSOR OF PRINCIPLES AND PRACTICE OF MEDICINE IN THE CHICAGO MEDICAL COLLEGE.

Read before the Section of Practice of Medicine, Materia Medica and Physiology, at the Thirty-Eighth Annual Meeting of the American Medical Association, June 8, 1887.

During the last few months numerous writers in Germany and France have described the good effects of antipyrin in acute rheumatism. It has been said of it that it relieves the pain and allays the fever as quickly as does the salicylate of soda, and that under its influence the cutaneous redness over the affected joints, and their swelling, gradually but soon disappears.

All of these statements I can confirm by my experience during the last four months in some twenty cases.

I have used antipyrin in acute cases, also in those that were subacute and in the acute exacerbations of those that were chronic. I noticed early that the greatest and most rapid improvement was obtained in cases in which there was a rise of temperature above the normal.

The first case in which I used antipyrin was one of chronic rheumatism in which there was, at the time, an acute exacerbation. The patient's stomach was so irritable that very little was retained by it. Enough of salicylic acid or of the salicylates could not be given to produce an impression on the disease. I therefore tried as an experiment a single dose of antipyrin, of twenty grains, at bed time. Soon after taking the medicine the pains, which were uniformly much more severe at night than during the day, were eased. The patient breaking into a profuse perspiration, fell asleep and passed the first restful night for some weeks. After a few days under this treatment her fever disappeared and she was almost free from pain. When the fever was wholly wanting it was noticed that the antipyrin ceased to ease the pain that remained, and did not relieve the chronic stiffness and swelling of the joints. As often, however, as the temperature rose the antipyrin acted well. I have met with similar results in the treatment of three other cases of chronic rheumatism. No relief to the pain, swelling and other symptoms of inflammation was obtained in a case of gonorrhœal rheumatism in which one ankle, one knee and the joints of the fingers were much swollen and exceedingly painful. There was in this case at the time no fever.

As an illustration of the action of antipyrin in acute cases, I will cite the history of a young man recently dismissed from Mercy Hospital, apparently cured. He had been sick with a sharply acute and quite severe attack of rheumatism for ten days, when he entered the hospital. During that time most of the large joints had been in turn affected. When first seen by me his temperature was 103°; his pulse quick, bounding, full, but compressible; his skin moist, with moderate perspiration; his countenance indicated pain and distress. At the time the pain was almost wholly limited to the left knee and right shoulder and elbow. All these joints were considably swollen, and the skin over the knee was very slightly reddened. There were no evidences of endo- or pericarditis. Appetite was completely wanting, but thirst was much increased. The bowels were constipated. The urine was somewhat scant and highly colored. Sleep of more than momentary duration had been impossible for many days. In a word, the patient at the moment presented the symptoms characteristic of a typical case of acute rheumatism. As it was one of the earliest cases of acute rheumatism that I treated wholly with antipyrin, I ordered at first the administration of a powder containing twenty grains of the drug only night and morning. The following afternoon he reported that soon after taking the medicine he slept, and for three or four hours was free from pain, but as the influence of the drug wore off the pain returned. His temperature had then lowered, but was still considerably above normal. I now ordered the antipyrin powders given three times daily instead of twice. Two days later the patient looked much better, and described himself as almost free from pain; the cutaneous redness over the knee was gone, and all the joints were less swollen, but still stiff and somewhat painful on attempted motion. The temperature for the most part during the preceding twenty-four hours was normal; twice it rose slightly. The frequency of the administration of the antipyrin was left to the judgment of the house physician; the directions being to administer the drug whenever the temperature rose or an access of pain occurred. Following this plan, he received during the next two days two powders daily. He was entirely comfortable so long as quick and violent movements were not attempted. For eighteen hours there had been no abnormal temperature. The swelling of the joints was much less, and freedom of motion much greater. The case progressed steadily in a favorable manner, and all stiffness and pain disappeared during the next week. The antipyrin was continued for several days after all fever was gone. No other medicine was administered after its discontinuance, the patient simply being guarded against adverse atmospheric influences.

In the other acute cases in which I have tried antipyrin I have been most pleased with the readiness with which it relieved pain and lessened fever. In some instances the improvement was more marked and more rapid than in the case I have just sketched; in others it was somewhat slower, but always decided. I feel confident that, so far as a limited number of cases will permit one to determine, antipyrin can be said to be as efficacious as the salicylates. Being at first impressed with the thought that the relief obtained in rheumatism was due to the antipyretic effects of the drug, I substituted for it salicylic acid as soon as the temperature became normal; as, however, experience showed that the efficacy of antipyrin did not depend upon this property, I continued its use, as improvement took place, in lessened doses and less frequently until a cure was established.

In the hospital cases most recently treated the drug has been used in fifteen grain or gram doses, administered at the height of the disease every four hours, diminishing the frequency of its repetition as improvement occurred. It has seemed to me that I obtained more satisfactory results in my private patients to whom I gave it in larger, twenty grain, doses, four times daily, when the disease was at its height, and to whom, during the period of improvement, it was given in smaller doses, but not at first less frequently. From sixty to ninety grains (four to six grams) daily are recommended usually by those who have employed antipyrin in rheumatism.

The advantage of antipyrin over the salicylates consists chiefly in its less nauseating properties, its less liability to provoke vomiting, headache, and noises in the ears. Not unfrequently a patient is found who can not take the salicylates in efficient doses. While trying antipyrin, both in rheumatism and in other febrile diseases, I have found only one or two persons who rejected it; and a few others, whose stomachs were irritable, who complained of slight nausea immediately after taking it. These effects are, however, much less frequently produced by it than by the salicylates. It can also be given efficiently, when necessary, by the rectum or subcutaneously.

The only ill effect that is likely to result from the

use of antipyrin is the so-called "antipyrin rash." This is seen only in a very small proportion of the cases treated with it. Two or three cases of fatal collapse have been reported, occurring in typhoid patients, after taking antipyrin. At the most, however, this is an exceedingly rare accident, and it is questionable even if, in the cases referred to, the accident was due to the antipyrin. Ringing in the ears has been reported as occurring, but so seldom that it need not be looked for when the usual doses are used.

Others have found, very rarely, a case of acute rheumatism in which no relief could be obtained from the antipyrin treatment. The same can be said, however, of the usual salicylate treatment.

The use of the drug does not appear to influence the frequency of the occurrence of heart complications, and their existence is not a contra-indication to its employment.

It is impossible, from what we yet know of the nature of rheumatism and of the physiological action of antipyrin, to explain thoroughly its therapeutic action. The perspiration which very uniformly follow its administration, and in rheumatism seems to accompany the diminution of pain, is probably due to relaxation of the cutaneous vessels, such as has been observed by Beyer[1] and others, and which naturally would feed and stimulate the cutaneous glands. It has been shown that the peripheral vessels dilate under the influence of antipyrin, the arteries dilating when large doses are administered, and only the veins and capillaries when smaller ones are employed. Whether this change of calibre is due to vaso motor influence or not is undecided, some claiming that the change is brought about by the direct action of the drug upon the vessels, since similar changes take place in isolated organs;[2] others claiming the reverse to be true.[3]

Antipyrin, when mixed with blood, does not cause a change of color or destruction of the corpuscles, as does kairin, thallin, resorcin,[1] and probably antifebrin.[4]

Possibly its antipyretic properties are to be explained by the vascular changes which it produces, since they would contribute to increase the radiation of bodily heat. This is the explanation offered by Bettelheim,[5] Auseroff and Beyer. Arduin thinks the diminution in temperature is due to an influence exerted upon the thermogenic nerve-centres. During the last month P. J. Martin[7] has published the results of experiments which show that, almost uniformly, heat production is diminished by antipyrin, and heat dissipation is very much increased. It thus would seem to be an ideal antipyretic. In the small proportion of cases in which heat production was not diminished, heat dissipation was so far in excess that the bodily temperature was lowered. Several observers have noted that under the influence of antipyrin the surface temperature rises while the internal temperature of the body falls.[8]

Its power of allaying pain in rheumatism is probably not dependent upon these vascular changes or the apyrexia produced by it, but upon a direct action on the nervous structures of the body. Antipyrin, though apparently most efficacious in rheumatic fever and least in muscular rheumatism; still, even in the latter, often acts beneficially. In many painful disorders purely neuralgic in character it gives the most prompt relief; for example, to the sharp neuralgic pains of locomotor ataxia. Ungar,[9] T. S. Robertson,[10] and others, say it is efficacions in migraine. Germain Sée[11] has witnessed its power of relieving pain in other forms of neuralgia, and in gout, lumbago and sciatica.

The fact that there was in these diseases no common pathological effect except that of pain, led the last writer to study particularly its action upon the nervous system. The results of his experiments he reported to the French Academy of Sciences on the 18th of April of this year. When injected subcutaneously in dogs three kinds of phenomena were observed: In the first place, a notable diminution of sensibility was observed, a true analgesia of the limb injected; sometimes, also, of the opposite one. In the second place, electric excitation of the sciatic nerve produced in the muscles of the opposite side only very feeble contractions, which points to diminished sensibility and reflex power in the spinal cord. In the third place, when antipyrin was introduced into the circulation of an animal except into one limb, the vessels of which were ligated, it was found that throughout the body the muscles contracted slowly and with difficulty, while those of the ligated limb contracted with their wonted vigor. It is evident, therefore, that antipyrin also affects the muscles; or more properly, perhaps, the nerve-endings in the muscles. Analgesic effects have been frequently noted by others. Large doses administered to animals cause convulsions, both clonic and tonic. Lessening of the reflexes, also, has been observed by others, as, for instance, by Arduin.[12] This last author, as well as Coppola,[13] thinks that the brain is influenced by the drug, since, when convulsions are produced by it, their severity is much diminished if the brain is separated from the cord.

Antipyrin does not affect the respiratory movements, although the frequency of respiration in fever diminishes as the temperature falls under its influence. As ordinarily administered, the rhythm and strength of the heart's action are not influenced. Beyer has shown by physiological experiments that when it exists in small amounts in the circulatory fluids, it causes an increase of work performed by the heart, while in large doses the contrary effect is produced.

[1] "The Influence of Kairin, Thallin, Hydrochinon, Resorcin and Antipyrin on the Blood and Blood-vessels." By H. G. Beyer, Am. Journ. Med. Sci., April, 1886.
[2] Quireilo and Coppola. See article by Beyer, Am. Journ. Med. Sci.
[3] Auseroff, Therapeutic Gazette. May 15, 1886.
[4] "De l'antipyrin contre la douleur." Par Germain Sée, Le Bulletin Médical, April 20, 1887.
[5] Bettelheim, Med. Jahr. K. K. Ges. d. Aerzt., ii, iii, 1886.
[7] "Modern Antipyretics." By P. J. Martin, Therapeutic Gazette, May 16, 1887.
[8] See Beyer, Am. Journ. Med. Sci.
[9] Ungar. Centralblatt f. d. Gesammte Therapie, January, 1887.
[10] "Antipyrin in Migraine, Pyrexia, etc." T. S. Robertson, N. Y. Med. Record, May 7, 1887.
[11] See above, Le Bulletin Médical.
[12] Arduin, Therap. Gazette, October 15, 1885.
[13] Coppola, Therapeutic Gazette, October 15, 1885.

Some have also noted increased force in the heart's action, while others have observed a diminution in it. This discrepancy is probably due to the size of the dose administered.

The drug is eliminated by the urine, and can be found in it two hours after administration, and usually for thirty-six to forty eight hours afterwards.[14]

The following conclusions are, I think, justified by our present knowledge of antipyrin in the treatment of rheumatism: 1. It is as efficacious as the salicylate of soda, producing similar therapeutic results, and is less nauseous than the latter, and does not produce headache or ringing of the ears. 2. Usually it acts most efficiently in the most frankly acute cases. 3. Besides reducing, by its antipyretic properties, the fever, and also the pain, which many antipyretics relieve, it reduces the pain by acting directly upon the nervous system.

65 Randolph St., Chicago.

MEDICAL PROGRESS.

COCAINE IN LABOR AND GYNECOLOGY.—DR. GEO. H. ROQUÉ DABBS, in a note on this subject, tabulates his observations as follows:

1. I obtained equally good results from a 6 per cent. solution as from a 12 per cent. solution of cocaine (hydro-chlorate), but in dry labors I now use a 4 per cent. solution of the alkaloid itself in castor-oil. Into the thin parchment like os I put a cocaine saturated plug of cotton wool, which I renew (or rather replace with a fresh plug) about every half hour, until fair dilatation has taken place.

2. In cases in which the labor progressed so slowly that some assistance is needed, and yet the cocaine need not as yet, be deposed in favor of chloroform, the form in which I have found ergot of most benefit has been as a hypodermic combination of sclerotic acid, gr. ⅙, and bimeconate of morphine, gr. ⅓. By means of Burroughs's tabloids I have been thus able to secure a certain degree more of uterine action, and with the bimeconate of morphine combined with the sclerotic acid and the internal application of the cocaine, have now seen many cases of almost absolutely painless dilatation of the os.

3. But of all uses for cocaine in connection with first labors, I have obtained the most gratifying results from the application of a 12 per cent. solution to the vulva and inside of the vagina during the slow progress of a case of marked perineal rigidity. I do not, of course, mean that the case is hastened much, but I do mean that the pain is lessened to an extraordinary degree.

4. My observations lead me to conclude that it is chiefly in primiparous (slow) labors that cocaine is of use (notably in breech cases), or in any case possibly in which the os dilates slowly and the peri neal rigidity is well marked.

5. In cases in which the os has to be dilated by tents, I have soaked and partly enlarged the tents in a hot oleaginous solution of the alkaloid before introducing them, with, as I think, considerable success; and in cases of tender and irritable vaginæ in which, for any reason, the speculum has to be used (gynecological cases), I have adopted the practice with great advantage of previously painting the vaginal walls with the solution of cocaine in castor-oil before alluded to.—*British Medical Journal*, April 30, 1887.

[14] Marigliano, Roberts. Jahresbericht, p. 313; Therapeutic Gazette, October 15, 1885.

OSMIC ACID IN SCIATICA.—NEUHER first suggested osmic acid as an anti-neuralgic remedy, and published the results of three cases, two of sciatic-neuralgia, and one of the facial. From ten to twenty-five injections were required to effect a cure. Eulenberg obtained three radical cures and four ameliorations out of twelve cases. Many others have used it with very much the same results, *i. e.*, with benefit in some cases, and without benefit in others. Dr. Stékoulis has tried it in twelve cases (six men and four women) of idiopathic sciatica, the duration of which varied from fifteen days to two years. The result of the treatment was eight successes, one much improved, and one in which the remedy proved inert, after four injections, beyond which the patient refused to go. Its effect is explained by the well-known effect of osmic acid on certain constitutents of nerve-tissue. No abscesses nor other inconvenience followed its use beyond the pain at the time of the injection. An aqueous solution, containing 1 per cent. of acid, is generally used, of which about sixteen minims are injected. It stains the skin and clothes black. The injection should be made *loco dolenti*, at first daily, and then less frequently.—*London Medical Record*, May 16, 1887.

PUNCTURE AND INJECTION OF ETHER AND IODOFORM IN PURULENT ABSCESS OF THE BUTTOCKS.—At a recent meeting of the Paris Surgical Society, M. TRÉLAT reported a case of purulent abscess, successfully treated by puncture and injection of ether and iodoform. The patient, a girl aged 17, had been attacked with typhoid fever eighteen months previously, and the abscess was diagnosed as necrobiotic, consecutive to vitreous alternation of the muscular fibres. A puncture was made, which gave issue to 45 grammes of pus, and 90 grammes of ether and iodoform were injected into the cavity. M. Trélat asked whether simple abscesses might not be treated in the same way. M. Terrier thought that in cases like that cited by M. Trélat simple puncture was sufficient. M. Championnière has found iodoform very irregular in its effects, and objected that the injection of this substance in ether constituted a long and painful treatment. M. Dentu had obtained better results with alcohol and chloride of zinc. M. Trélat, in his reply to these objections, stated that it was important. in an æsthetic point of view, to avoid the cicatrix which always remained after an incision, and this was practically accomplished by puncture and the injection of iodoform.—*London Medical Record*, May 16, 1887.

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THE ILLINOIS PRACTICE ACT.

On June 15th the Illinois Legislature passed a bill for an amended medical practice act. Though the wording is different in almost every section, the bill as passed is very similar to the original practice act, passed in 1877. The chief difference is to be found in Section 10 of the new act, which reads as follows:

Any person shall be regarded as practicing medicine, within the meaning of this act, who shall treat, operate upon, or prescribe for any physical ailment of another. But nothing in this act shall be construed to prohibit service in cases of emergency, or the domestic administration of family remedies.

As before, this section is inapplicable to surgeons of the Army, Navy, and Marine Hospital services. The other amendments to the old practice act are, the doing away with the "ten years' practice" clause, fixing a fee of $20 for the examination of non-graduates (which fee is returned if the applicant fail to pass the examination), and giving the State Board of Health power to license itinerant vendors (the fee being $100 a month).

In connection with this subject may be mentioned the case of George J. Williams *vs.* The people of the State of Illinois, error to Criminal Court, Cook Co., recently decided by the Supreme Court, opinion delivered by Judge Sheldon, and the judgment of the lower court affirmed. Under the practice act of 1877, Williams was fined $200 for practicing medicine illegally. It was held by the attorneys of the plaintiff in error that the act under which the conviction was had is unconstitutional. Judge Sheldon said: "We do not understand the act to be challenged in this respect in the regard of its feature of prescribing qualifications for the practice of medicine. It is the common exercise of legislative power to prescribe regulations for securing the admission of qualified persons to professions and callings demanding special skill. And nowhere is this undoubtedly valid exercise of the police power of the State more wise and salutary, and more imperiously called for, than in the case of the practice of medicine. It concerns the preservation of the health and lives of the people. But the constitutional objection which is urged against the act is that it is special legislation. The special feature which is claimed is the proviso to the act, which is, 'Provided, that the provisions of this act shall not apply to those that have been practicing medicine ten years within this State. This proviso does not confer upon the ten years' practitioners any special privilege, immunity or franchise. It does not confer upon them anything; it leaves them as they are.

"But it is said the act is one to regulate the practice of medicine, and that it subjects to regulation only a class, to-wit: graduates with diplomas and applicants for a certificate of examination, while the ten years' practitioners are not subjected to any regulation at all, by anything in the act. It becomes proper to look and see what the provisions are. The first clause of the act is as follows: 'Every person practicing medicine in any of its departments, shall possess the qualifications required by this act.' All the other provisions of the act as we view them, only respect such qualifications, with the exception of one section, which requires any itinerant vender of any drug or nostrum, ointment, etc., to pay a license of $100 a month. It was within the province of the legislature to prescribe what should be the qualifications for the practice of medicine, and what the mode in which they should be determined. The act provides as to a graduate in medicine with a diploma, that he may practice upon his diploma, it being verified as pointed out by the act. In regard to others, it is provided they shall undergo an examination before the State Board, or Board of Examiners, and may practice upon the certificate of the Board. As respects the proviso, we regard it in the light of but prescribing a qualification, that ten years' practice within the State should constitute a qualification for practicing medicine.

"It is virtually conceded in the argument of appellant's counsel, that the general assembly might make the qualification of ten years' practice prior to the act, equal to the qualification of a diploma or certificate of examination, and that the proviso might have been un-

objectionable had it been limited to the provisions of the act in respect of qualification—that its vice is in saying, that 'the provisions of this act,' that is, that not its provisions in respect of qualifications, but each and every of its provisions should not apply to the ten years' practitioners. And it is said that there is one section which regulates practitioners in respect to conduct, giving the power to exclude them from practice for unprofessional or dishonorable conduct, and that this is a provision from which the ten years practitioners are, by the proviso, exempted. This section referred to is that the Board may refuse certificates to individuals guilty of unprofessional or dishonorable conduct, or may revoke certificate for like causes.

"As respects the objection of this provision unjustly discriminating between classes of practitioners, we regard it but as a regulation pertaining to qualifications for admission to practice. It certainly is such, as regards applicants for admission, and as respects those who had been admitted to practice on the Board's certificate, the provision essentially is that where there has been abuse of the license granted, by having been guilty of unprofessional or dishonorable conduct, the licensing Board may revoke the license which they had granted. All is really but in regulation of admission to practice upon the certificate of the Board. It has no application to ten years' practitioners, as they are not admitted to practice upon the Board's certificate, but they are, by the act itself, licensed to practice. The propriety of the provision as regards the holders of certificates, in making their certificates subject to revocation by the Board for unprofessional and dishonorable conduct, we do not regard as involved in this case, or that we are called upon to express any opinion thereon. Appellant has no grievance in this respect. He has not had any certificate revoked, has never received a certificate, or been licensed to practice. And if, in this particular, the act could be regarded as unconstitutional, we would not hold the entire act, for that reason, to be void, or to be so, in so far as it bears upon the appellant.

"It is assigned for error that there is no evidence in the record tending to show that appellant had not complied with the requirements of the law, and had not practiced medicine ten years previous to 1877, and in refusing to instruct the jury that the burden was on the prosecution to make such proof.

"The case comes within the general rule upon this subject which is laid down by Greenleaf: 'But where the subject-matter of a negative averment lies *peculiarly within the knowledge* of the other party, the averment is taken as true, unless disproved by that party. Such is the case in civil or criminal prosecutions for a penalty for doing an act which the statutes do not permit to be done by any persons, except those who are duly licensed therefor; as, for selling liquors, exercising a trade or profession, and the like.'" Judgment was affirmed.

THE JOURNAL.

The present number of THE JOURNAL commences the fifth year of its publication and the ninth volume. And, what is of more importance, it contains a material increase in the number of its pages, and other marks of improvement, justified by the increased income of the Association during the past year. The same circumstances that have justified the addition of more pages of reading matter have also enabled us to make reliable arrangements for additional work in all departments of journalism. The first sixteen or eighteen pages of each number of this volume will be occupied mostly by the addresses and papers presented at the recent meeting of the Association, not, however, to the entire exclusion of valuable papers from other sources; but we shall endeavor to secure more attention to selection of the more valuable items in the proceedings of active Medical Societies in all parts of our country; more prompt, though brief, notices of new books; greater variety in the leading or editorial articles; and careful noting of important sanity measures and of attempts to regulate medical education and practice by legal enactments.

In the last number of Volume VIII, June 25, we gave the full record of proceedings of the thirty-eighth annual meeting of the American Medical Association, including two or three reports containing matters of more than usual interest, and which we hope will attract the attention of every reader. To some of these we shall have occasion to refer more at length before the time to commence arrangements for the next annual meeting.

WASHING OUT THE STOMACH.

In an article in *L'Avenir Médical*, DR. LEFRANC condemns the indiscriminate use of the tube so much in fashion at the present time for washing out the stomach and for feeding in certain cases, as the frequent introduction of any instrument into the stomach, however pliable or inoffensive it may appear, must after a time prove injurious to that organ.

Washing out the stomach has been practised in two principal forms of dyspepsia: the putrid, and in

that form known as dilatation of the stomach. In the first case, the object is to remove the putrid and fermented matters lodged in the stomach. In the second, the object is to promote the contractility of that organ, the effect of which is supposed to be analogous to that produced by a douche on the striated fibres of the voluntary muscles. But, besides the analogy not being quite applicable to the smooth fibres of the stomach, the results predicted by those who have been instrumental in introducing this mode of treatment into practice have not been confirmed by clinical experience. Dr. Lefranc suggests that when it is proposed to determine on the stomach of a dyspeptic a profound and durable curative action, it should be remembered that the gastric mucous membrane is in such cases in a permanent state of catarrh, more or less intense, and that it is loaded with ferments. But the stomach itself possesses a fermenticide much more efficacious than washing it out, an operation which, as has been already observed, is far from being inoffensive, and is sometimes followed by the most disastrous results, and even by death: this is the physiological gastric juice in sufficient quantity. The best means by which to combat or prevent the formation of ferments in digestive trouble is by adopting the neurasthenic medication which acts directly on the stomach, of which the spasms and nervous gastric symptoms are calmed, and the glandular function of the organ is stimulated or rectified. To fulfil these indications the bitter tonics, such as calumba, nux vomica and quassia, are the most effectual remedies.

HYDROCHLORIC ACID SOLUTION IN DYSPEPSIA.—In connection with the treatment of affections of the stomach, we may note that DR. TALMA asserts that he has employed with advantage, hydrochloric acid in the proportion of 1 gramme to 750 grammes of water. This is the strength for adults, and the solution should be made lukewarm, and taken in small quantities in the twenty-four hours. The best effects are produced, particularly when the remedy is taken after each meal. The diet should be attended to: fat should be excluded, and contrary to precedent Talma does not prescribe milk for chronic catarrh nor for ulcer or cancer of the stomach. Hydrochloric acid not only prevents the fermentation of the contents of the stomach, but by its antiseptic action it has also a beneficial influence on the coats of that organ. In nervous patients, or those showing a peculiar susceptibility to the action of hydrochloric acid, Dr. Talma begins by employing alkalies before administering the acid. In another series of cases, in which despepsia was caused by cerebral anæmia, as in pregnant women, Dr. Talma has obtained good results by the employment of nitro-glycerine in doses of 1 milligramme in the twenty-four hours. But before Talma, Trousseau had long ago prescribed hydrochloric acid in the treatment of dyspepsia, and many specialities of the present day, owe their success in diseases of the stomach to the presence of this acid.

FUNDS FOR THE NINTH INTERNATIONAL MEDICAL CONGRESS.

At the recent meeting of the Executive Committee of the Congress, it was directed that all receipts from membership fees be reserved for the publication of the transactions, and the $10,000 appropriated by Congress, with so much of the moneys donated by individuals, medical societies, etc., as may be necessary, may be used for preliminary printing and for the accommodation and entertainment of the Congress. At a recent meeting of the Illinois State Medical Society an appropriation of $750 was made; at the meeting of the American Medical Association, $1,000; at the meeting of the Kentucky State Society, $250; and the Faculty of the Medico Chirurgical College, of Philadelphia, contributed $100. These contributions added to those previously reported, give assurance that the financial interests of the Congress will be well sustained.

THE BUREAU OF GENERAL INFORMATION, WASHINGTON, D. C.—Physicians and others who desire to obtain information and references from the library of the Surgeon-General's office, or from any other sources in Washington, will find it to their advantage to communicate with the Manager of this Bureau, Joseph B. Marvin, P. O. Lock Box 379, Washington, D. C.

SOCIETY PROCEEDINGS.

ASSOCIATION OF AMERICAN PHYSICIANS.

Second Annual Meeting, held in the Army Medical Museum Building, Washington, June 2 and 3, 1887.

THURSDAY, JUNE 2—FIRST DAY.

The meeting was called to order by the President, DR. S. WEIR MITCHELL, of Philadelphia, who delivered a brief address in which he referred to the purposes of the Association. He reported the death of three members, Dr. Thomas F. Rochester, of Buffalo, Dr. Thomas A. McBride, of New York, and Dr. E. Darwin Hudson, Jr., of New York.

DR. R. PALMER HOWARD, of Montreal, read a paper on

CIRRHOSIS OF THE LIVER IN CHILDREN.

He reported two cases in which cirrhosis of the liver was present in children, brother and sister. He exhibited sections of the organ.

DR. WM. A. WELCH described a case of cirrhosis in a child twelve years of age. He came from the coast of Africa and suffered with malaria. Both the liver and spleen were deeply pigmented. The clinical features of the case could not be obtained. Most of the cases of cirrhosis of the liver of malarial origin have been reported from the coast of Africa.

DR. F. FORSHEIMER, of Cincinnati, had seen two cases that may possibly be called cirrhosis. One was that of a child of eight years. At the autopsy the characteristic hob-nail liver was found. In this case he considered the cirrhosis due to syphilis. The second case is now under observation, the patient being in the last stage of cirrhosis. In this case there is a history of syphilis and the child has hereditary syphilis of the nervous system. To his mind it is clear that syphilis is the most common cause of cirrhosis of the liver in children.

DR. WILLIAM PEPPER, of Philadelphia, reported a case in which cirrhosis of the liver followed measles in a child eight years of age. During the attack of measles, there were symptoms of hepatic disorder as shown by occasional attacks of catarrhal jaundice. Subsequently the symptoms of developing cirrhosis made their appearance and death in a comatose condition finally occurred. The whole duration of the case could not have been less than a year. At the autopsy a typical hop-nail liver was found.

DR. JOHN GUITÉRAS, of Charleston, S. C., read a paper entitled

OBSTRUCTIVE SAFETY-VALVE ACTION IN THE HEART, AND DIRECT FUNCTIONAL MURMURS.

In a previous paper on malignant endocarditis the author had dwelt upon the significance of mitral direct presystolic murmurs, which were proven by the autopsy to be unconnected with any lesion of the mitral orifice. The lesions were those of intense aortic regurgitation. He had attributed the murmurs to the recoil of the blood upon the mitral leaflets holding them tense against the stream of blood coming from the auricle. In the opinion of the late Dr. Flint, direct functional mitral murmurs were limited to a small number of cases of aortic regurgitation, but the author thought that the functional mitral murmurs were not so rare. Obstructive functional murmurs are common in aortic regurgitation.

Pulmonary systolic murmurs are more frequent than any other form of cardiac murmurs. In examining one hundred consecutive cases, he had found in sixty-two, systolic, pulmonary artery murmurs. In these the murmurs were present during tranquil breathing or during respiration in such a way as to produce changes in the pulmonary circulation. If account is taken of the bruits heard in this region the proportion becomes greater. The clearness with which these murmurs are heard depends upon the proximity of the artery, the thinness of the chest walls, the nature of the surroundings, and finally the proximity of the main trunk to the capillary distribution. Systolic pulmonary murmurs can be developed in the majority of healthy individuals, if we exclude those with thick chest walls and those who are not intelligent enough to modify their breathing as directed. The author held that such a murmur was a dynamic, obstructive valvular murmur, and is produced by the effect of changes of blood pressure upon the semilunar valves. A certain degree of pressure in the artery must tend to prevent the opening of the valve. This causes a slanting position of the valves, and a narrowing of the orifice, with the production of a sonorous whirl. The fact that such murmurs are not more frequently developed at the aortic orifice is due to the greater power of the ventricle and the wider distribution of the systemic circulation. There are, however, cases in which increased arterial tension is expressed not only by accentuation of the aortic second sound, but by an aortic systolic murmur. He had heard it in atheroma, and in Bright's disease, where there was no marked anaemia. Pulmonary artery murmurs as heard in ordinary breathing is confined to the expiratory act and is broadest at the beginning of the act. The murmur is sometimes only heard with the first beat that occurs with expiration. In order to further develop this murmur, it is only necessary to arrest respiration. It is better to stop breathing during expiration, especially at the end of normal expiration. A full expiration makes the murmur louder. At the end of inspiration, it is more difficult to develop the murmur, for several reasons: 1. because it requires entire arrest of respiration to produce engorgement of the main trunk; 2. because prolonged inspiratory effort is accompanied by a continued hum of the intercostal muscles; 3. because the expansion of the lung interferes with the transmission of any murmur that may be present. A slight murmur is frequently heard in inspiration if the arrest of breathing is pushed fast enough. The speaker asked, are we not justified in assuming that there is a safety valve action in this attitude of the pulmonary valve, which together with the leakage at the tricuspid orifice, tends to prevent engorgement of the lungs by the retardation of the flow of blood in the systemic veins, so that continued for a time it does no harm? In reference to the murmurs of anæmia, the author thought that they were due to some disturbance of the apparatus. In this condition there is a marked reduction in the quantity of blood, the valves require a certain amount of expansion of the vessels in order to allow them to apply themselves to the walls. Venous hums and basic murmurs he thought to be of valvular origin.

DR. A. L. LOOMIS, of New York, remarked that we should recognize that murmurs within the heart cavities are due to many different causes. The obstructive mitral murmur referred to, were, he thought, of frequent occurrence in connection with aortic diseases where there is dilatation and feebleness of heart power, but on autopsy he had always found such changes in the mitral valves as seemed to account satisfactorily for the murmurs heard. He had

heard the murmurs so readily produced during respiration, but where these murmurs have been persistent, he had always found conditions of anæmia and failure of the right heart. It seemed to him that the explanation is either hæmic or failure of heart power. We shall as we study the cases more, find that they are due not so much to changes in the valvular orifices as to changes in the heart cavity, and in the heart walls. Murmurs have come to be of very little pathological significance to him unless there are other changes associated with them. The worst cases of heart disease he had met with have had the simplest and least distinct heart murmurs.

Dr. E. T. Bruen, of Philadelphia, reported a case of severe anæmia in which there was great relaxation of the muscular system; so much so that as the arm hung out of the bed, there was a venous pulse at the back of the wrist. This was attributed to relaxation of the capillary vessels to such an extent as to permit the systolic impulse of the left ventricle to force the blood through the capillaries into the veins. In this case there were murmurs at each of the valves of the heart. As the anæmia improved and the crasis of the blood was restored, the venous pulse disappeared and the murmurs gradually lessened and the man has now no murmur whatever.

Dr. F. P. Kinnicutt, of New York, said that it has been claimed by certain observers that pulmonary systolic murmurs are transmitted from the mitral valve into the auricular appendage. The condition required that this may occur is said to be dilatation of the appendage causing it to approach the chest wall. In some anatomical examinations made a few years ago he found that in the normal condition the auricular appendage was concealed beneath the pulmonary artery, and when fully dilated its tip only could be seen beyond the edge of the artery. It was even then one and a half inches from the internal surface of the chest.

Dr. F. C. Shattuck, of Boston, remarked that when auscultation was first introduced all cardiac murmurs were considered of bad omen. It was then discovered that many systolic murmurs were practically of no importance. We are now finding out that all diastolic murmurs are not of evil import and that they may be transitory and functional. A murmur by itself is next to nothing, there must be something beside the murmur to make it of much importance.

Dr. Samuel C. Chew, of Baltimore, said with reference to the diagnosis between aortic regurgitant and mitral direct murmurs, that the diagnosis can usually be made by attention to the following points. An aortic diastolic murmur although it may be intense at the apex, becomes manifestly louder as we reach the right side of the sternum in the second intercostal space. It will then occupy the whole diastole. If the murmur is mitral in origin it generally will be also heard in the scapular region. The aortic murmur is not apt to be heard in the latter situation.

Dr. Beverly Robinson, of New York, had occasionally found in acute strain of the heart, murmurs which unquestionably had nothing to do with organic changes in the heart, and can not be explained as due to any special modification in the blood. The murmurs seem to be due to more or less acute dilatation or obstruction of the mitral orifice.

Dr. Israel T. Dana, of Portland, Me., had under observation two sisters. The mother died of organic heart disease. Both of these sisters have had a mitral regurgitant murmur. In the older sister the murmur after remaining five or six years disappeared. It remained absent for one or two years and then returned, and has continued for the past two or three years. In the second case, the murmur after having been present for five or six years disappeared, and has since remained absent. He asked if it were possible that a murmur connected with organic heart disease should disappear with improvement of the health and reappear when the health again fails?

Dr. Hosmer A. Johnson, of Chicago, read a paper on

pneumatic differentiation.

In the absence of the author the paper was read by the secretary. The author had compared the results obtained by the cabinet with those obtained by the Waldenburg apparatus, and he held that the former accomplished no more than the latter. The pneumatic cabinet he considered cumbersome and expensive, with nothing especially to commend it in the treatment of pulmonary diseases.

Dr. John S. Billings, U. S. A., read a paper on *Methods of Literary Research.*

Afternoon Session.

Dr. H. C. Wood, of Philadelphia, read a paper on

the antipyretic treatment of fever.

He had prepared certain propositions which he read and then gave what he thought to be the proof of their correctness. *First*, Fever is a disturbance of calorification in which through the influence of the nervous system, heat dissipation and heat production are both affected. If there be a fever which is produced by the direct action of a poison, independently of the nervous system, we have at present no proof of its existence. In his experiments the agent used to produce the fever has been the pyrogenic principle found in ordinary commercial pepsin.

Second. Heat production is regulated by a nervous apparatus, our knowledge of which is still imperfect. There is certainly an inhibitory centre which depresses or controls the production of heat. It probably does this by acting upon the trophic cells of the gray matter of the spinal cord. It is possible, also, that there is a centre which, when excited, increases tissue change, but its existence has not yet been proven. The speaker than gave a résumé of the experiments which he had performed, which, in his opinion, proved the truth of the above proposition.

Third. Heat dissipation is regulated through the vaso-motor system, so that vaso-motor paralysis is followed by an enormous loss of animal heat, and under unfavorable circumstances by death from cold. If section of the cord is made in such a way

as to get vaso-motor paralysis without destruction of the respiratory centres, the heat dissipation rises enormously. If the animal is kept in a temperature of 50° or 60° it dies in a few hours of progressive loss of heat. If kept in a warm chamber it lives for days. The cause of the rapid heat dissipation is the opening of the blood-vessels of the surface of the body.

When these remarks are applied to a study of antipyretics, it is seen that drugs may lower bodily temperature in health or in fever by increasing heat dissipation. In this way act all agencies which cause vaso-motor paralysis. Antipyretics acting in this way may be called false antipyretics. Then it is conceivable that there may be drugs which act on heat production through the inhibitory nerve apparatus, of which mention has been made. Such drugs may for convenience be called true antipyretics. Aconite veratrum viride and drugs of that class belong to the false antipyretics. Whether or not there are any true antipyretics has been a question which we have been unable to answer. With regard to antipyrin, certain experiments made in the University of Pennsylvania, seem to give some positive results. Care must be exercised in these experiments not to confound a normal defervescence with the action of the drug administered. In the dog the use of antipyrin diminishes both heat production and heat dissipation, the former being diminished more than the latter. It is probable that heat production is primarily affected. The question arises whether this result is due to an effect on the circulation? He had found that antipyrin had no effect upon the circulation. The blood pressure was uninfluenced by its administration. He therefore concluded that the action of antipyrin upon the bodily heat was entirely independent of any action upon the circulation, and the probabilities are, of course, that it acts through the nervous system. Beyond this our present knowledge does not extend.

DR. FRANCIS MINOT, of Boston, read a paper on

THE TREATMENT OF TYPHOID FEVER BY ANTIPYRIN AND THALLIN.

The paper was based on the observation of twenty-four cases treated in the Massachusetts General Hospital, the object of the study being to ascertain the proper dose of the drugs; their general and specific effects upon the patients; the results from their continued use as compared with those from their occasional employment; any unfavorable results; and the general effect of antipyrin and thallin upon the course of the disease.

The following conclusions were reached: 1. Both antipyrin and thallin have a remarkable power of reducing the temperature in typhoid fever. 2. In no case was the use of these refrigerants apparently followed by any unfavorable effect upon the course of the disease. 3. The general condition of the patient was more comfortable after taking antipyrin and thallin, which were often followed by sleep. 4. The refrigerant medication by antipyrin and thallin appears to have no specific or decided effect upon the course or issue of typhoid fever. It often contributes much to the patient's comfort, perhaps indirectly promotes his safety. 5. The effect of antipyrin and thallin in promptly lowering the temperature shows that the danger in typhoid fever does not consist in high temperature alone, and that the latter is rather an index of the violence of the abnormal condition which we call fever, though, perhaps, adding somewhat to the danger. 6. By the internal use of antipyrin and thallin, all the effects which are claimed for the treatment of typhoid fever by the cold bath are readily obtained without the trouble and inconvenience of the latter method, and without exposing the patient to the dangers of exhaustion and shock, consequent on the fatigue of removal from bed. 7. These remedies may be given without danger to the youngest patients in suitable doses, and indeed, their beneficial effects are more decided and the unfavorable consequences are less observable than with adults.

DR. I. E. ATKINSON, of Baltimore, said that, as regards the relative merits of antipyrin, and antifebrin, he thought that the tendency to chilling after the use of thallin is decidedly greater than after the use of antipyrin, while the latter is more apt to produce nausea and vomiting. He disagreed with the statement that the use of these drugs can take the place of the external application of cold water. Although with antipyretics we can reduce the temperature at pleasure, yet the duration of the case is not lessened, and in some cases it has been thought to have been prolonged.

DR. GEORGE L. PEABODY, of New York, had found that a certain proportion of cases which do not bear the cold bath will bear the use of antipyretic drugs, while on the other hand, the bath may be used in a certain number of cases in which antipyretics cannot be applied. From clinical experience, he was convinced that the cold bath accomplishes more than the simple reduction of temperature. Its soothing effect upon the nervous system is greater than that accomplished by the reduction of temperature by antipyretic drugs. Another important matter is, that since the introduction of these methods of antipyresis, the number of relapses seem to be greater and more fatal.

DR. WM. M. WELCH said that there is comparatively little evidence that the grave symptoms of fever are referable to the elevation of temperature. There is no doubt that temperature of 110° to 113° produce serious symptoms, but whether or not ordinary temperatures of 105° to 107° exert any serious action on the body, is a question which is certainly unsettled. It has been shown that rabbits can be kept in a box with a continuous rectal temperature of 107° for at least two weeks, provided the precaution is taken to keep the box well ventilated, and the animals supplied with moist food. Patients may have a perfectly clear brain, and no grave symptoms with a temperature of 106° or 107°. On the other hand, there are severe and fatal cases of typhoid fever in which the temperature has never registered a great height. While in most cases there is a certain proportion between the height of the temperature and the severity of the disease, yet there are

certain cases where this proportion does not exist.

Dr. William Pepper said, that the action of these drugs seems to be purely through the nervous system. He had seen no effect upon the circulation, upon the respiration, or upon the secretions save that of the skin. Some of his observations have been of interest with reference to the relative value of the external use of cold water and the internal use of antipyretics. In the sudden acute pneumonia of children with a temperature of 106° or 107° with initial convulsions, where the prompt and repeated use of cold baths has been without gratifying results, full doses of either of these antipyretics have produced a remarkably successful effect. As to the ability of these agents to replace cold baths under all circumstances, the evidence is not adequate. In the sudden hyper-pyrexia occurring in the course of rheumatism, he was not prepared to accept the view that these drugs are capable of replacing the cold bath. In these cases we have direct evidence that the high temperature is the direct cause of the symptoms at least of the severe nervous symptoms.

Dr. George B. Shattuck had used both antipyrin and antifebrin largely, and it seemed to him that antifebrin offers all the advantages of antipyrin without its disadvantages. It has none of the disadvantages which belong to thallin. Three or four grains of antifebrin accomplishes the same results as are produced by a larger dose of the other drugs. With reference to the point suggested by Dr. Welch, he said that whether pyrexia is or is not a dangerous feature of the disease, we find clinically that where a patient has high fever, is irritable and uncomfortable, the administration of one of these antipyretics or the external use of cold water produces a tranquil and refreshing sleep, and the patient awakes in a condition much better to continue the struggle with the disease.

Dr. J. C. Wilson, of Philadelphia, referred to a recent observation which he had made as bearing on the question of heat dissipation. He had lately been treating a case of typhoid fever, in which from time to time, antifebrin in 5-grain doses was given. These were repeated whenever the temperature reached 104°. This caused copious sweating with the usual reduction of temperature, amounting to 3½° or 4°. On the last occasion $\frac{1}{96}$ of a grain of sulphate of atropia was given with the antifebrin. No sweating occurred and the temperature was reduced only 1½°.

Dr. James T. Wittaker, of Cincinnati, differed from those who seem to accept the view that fever is a neurosis. We have no proof that the nerve centres are distinctly irritated, and we have no proof that the agents which reduce fever act directly on the nervous centres. Is it not more probable, he asked, that the antipyretic action is really an antimicrotic action? We have some observations which go to show that the disease is caused by bacteria, or if not directly by bacteria by some of their products, the ptomaines. Would it not be more rational to study the habits of these bacteria and address ourselves rather to the removal of the cause than to the counteracting of the effects?

Dr. H. M. Lyman, of Chicago, was disposed to regard the great value of antipyretics as proceeding not so much from their power to reduce temperature as from their general effect, especially upon the nervous system. He regarded them as valuable adjuvants in the treatment of disease, largely from their hypnotic and tranquilizing effect upon the nervous system to which allusion has already been made. He had observed that in many instances in which in abrupt febrile affections relief has not been secured from antifebrin and antipyrin, this failure is frequently due to the presence of the condition we call rheumatic, and then salicylic acid gives the relief that we fail to get with the antipyretics.

Dr. John Guitéras said, that in treatment of the continued fevers of warm climates the results have been rather negative, and have showed the advantage of stopping the use of these drugs after they have been continued for a certain length of time. He had been called in consultation where the drug had been continued for ten or fifteen days, each time that it was given producing a certain reduction of the temperature but having no permanent benefit, and the patients had begun to improve as soon as the drug was stopped. The effect of cold water baths in these continued fevers of the South had seemed more beneficial. If continued for two or three days they often favorably modify the course of the disease.

Dr. George L. Peabody said, there was no question in his mind that a considerable proportion of cases of typhoid fever can be aborted by antiseptic treatment of the intestinal ulcers with naphtholin or resorcine. For the last two years he had treated all cases coming under observation during the first ten days of the disease with a calomel purge (10 grs.) followed by naphtholin in such doses that at least 70 or 80 grs. are taken during the twenty-four hours. Under this treatment he had succeeded in aborting many cases in which the symptoms were quite pronounced.

Dr. James Tyson, of Philadelphia, reported a recent case of rheumatism, in which the temperature suddenly went up to 105°, with alarming brain symptoms. Antifebrin in 5-grain doses failed to produce any effect. The patient was then put into a cold bath, and the temperature of the water gradually reduced to 72°. The discomfort experienced by the patient then prompted his removal from the bath. The thermometer in the rectum showed a reduction of only ½°, but within the course of half an hour the temperature fell 3°. The fall in temperature was followed by a disappearance of all the symptoms and the recovery of the patient.

Dr. Henry Hun, of Albany, reported some

CASES OF SEWER-GAS POISONING.

The author reported in detail the histories of twenty-nine cases coming under his observation, in which various diseases appeared to have been due to the inhalation of sewer gas. He thought it probable that the following diseases may result from severe gas poisoning: vomiting and purging, separately or combined, general debility, fever, sore throat of a

diphtheritic type, neuralgia and perhaps, also, myelitis of the anterior horns. These conditions are frequently combined. Fever is frequently associated with the other symptoms. There is one group of symptoms which is almost always present, that is loss of appetite, extreme prostration and pain in the head. When this occurrs as a chronic condition we are justified in suspecting that the patient is suffering from sewer gas poisoning.

DR. ISRAEL S. DANA, of Portland, Me., reported

A CASE OF ANEURISM OF THE ABDOMINAL AORTA.

A man of 30, of previous robust health, was found August 6, 1886 emaciated, feeble, anemic, dyspeptic and with very frequent, unsteady and irregular pulse. The most prominent symptom was a constant sensation of throbbing and pulsation centering in the epigastrium. In August, 1884, he fell ten feet, striking on small of back, but felt as if hurt internally. The sore spot remained. Gradual deterioration of health occurred, until in latter part of June, 1886, he was utterly incapacitated from all labor. Exploration of abdomen anteriorly revealed the existence of a small equably expansile tumor just above the level of the umbilicus. Distinct blowing sound. On examination posteriorly, there was found a distinct independent centre of motion and sound. The sound was double, sharper and more intense than that heard in precordial region, and possessed a well-marked "booming" quality. Diagnosis of small traumatic aneurism of abdominal aorta just after its passage through diaphragm was made. Treatment consisted of absolute rest in bed for two months; restricted diet of bread, meat, milk and cocoa, limited amount; iodide of potassium 20 grs. four times a day. Immediate improvement ensued within first week, and continued gain in power, till by the mid dle of November he could walk and ride about carefully. On May 9, 1887, physical examination revealed anteriorly, the existence of the aneurismal mass, perhaps a little diminished in size, while the blowing sound was scarcely audible. The impulse and expansion were markedly reduced. On examination posteriorly, the independent centre of pulsation and double sound was found, but both motion and sound were greatly reduced in amount, and the booming quality was gone.

The chances of final complete recovery were not considered encouraging circumstances of patient not favorable to such rest, recreation and tranquility of mind as might be desirable, and even with all external conditions at the best there would yet be too many dangerous liabilities remaining, such as embolism, pyæmia, atheromatous, degeneration, etc. The quick improvement under treatment is noticeable. The patient himself attached great value to the iodide of potassium which he still takes, feeling so much better while taking it that he is unwilling to leave it off.

(To be concluded.)

FOREIGN CORRESPONDENCE

LETTER FROM STRASSBURG.[1]

Prof. E. Fischer—Spiral Growth of Organs—Apparatus for detection of Spinal Curvature—Prof. Luecke—Resection of Intestine for Gangrene—Fæcal Fistula—Ectopia of the Bladder—Stimulants in Pyæmia—Antisepsis—The Bürger Hospital—Prof. Freund—Septicæmia and Antisepsis—Hairpin Tumor—Von Recklinghausen—The Pathological Institute—Tumors of the Pancreas—Myositis Ossificans.

Dear Doctor Fenger:—Having completed my mission in Paris, I came directly to Strassburg, where I arrived April 1. My first call was on Prof. E. Fischer, who had just returned from Berlin, where he had spent five months in studying specimens in the different museums with reference to spiral growth, a subject to which he has called the attention of the profession in a lengthy monograph from his pen. Prof. Fischer, who is well and favorably known in German surgical literature, is a good example of German industry and enthusiasm. The doctrine which he advanced some time ago, that all organs during their growth, assume a spiral shape something like a cork-screw, and that the spiral curves always take a definite direction, right or left, according to their anatomical relations to the central axis, had to be demonstrated more thoroughly for his own satisfaction and for the purpose of giving this principle a practical application. To do this he obtained a leave of absence, and for five months, at considerable expense, he studied his favorite subject in the different embryological, anatomical and pathological collections in Berlin. The results of these researches have only served to confirm his views, and he has been able to show that in the fecundated ovum the spiral growth becomes apparent after the third segmentation, and that even the protoplasm in each individual cell is arranged in a spiral manner. For more than two hours I listened patiently and interestedly to his remarks, and examined the specimens which he has utilized in illustrating his monograph. As striking illustrations of spiral growth, he calls attention to the structure of the umbilical cord, the heart, the long bones, the bladder and the nerves. Many deformities he attributes directly to an increase or dimunition of normal spiral curves, so for instance scoliosis and germ valyum and varum. Professor Fischer has devoted a great deal of time to a study of lateral curvature of the spine, and has invented a most ingenious apparatus which enables him to detect a very slight degree of deviation, and thus resort to appropriate early treatment. The patient is placed upon a platform divided into two equal parts, under each of which a scale is arranged so that when the patient is placed into a perfectly erect position in front of a perpendicular staff, the weight on each side can be accurately ascertained. Asymmetry of the lower extremities is recognized as a frequent cause of scoliosis, and the deformity is at once improved, and further aggravation prevented, by supplying the

[1] By permission of Drs. Fenger and Senn.

shoe on the affected side with a sole of sufficient thickness to balance the length of the opposite limb. Prof. Fischer is a hard student, a conscientious worker and will not fail in making many more valuable contributions to surgical literature.

The surgical wards of the Bürger Hospital, in charge of Professor Luecke, are in a separate building, recently erected, and supplied with all modern improvements and conveniences. The average number of surgical patients is 150. Prof. Luecke, whom I had the pleasure of meeting in 1878, looks very much older, but his working capacity remains unimpaired. He showed me a number of exceedingly interesting cases, among them a resection of the intestine for gangrene, where twelve inches was removed in a case of strangulated hernia, the bowel sutured and returned. The resection was done sixteen days after the herniotomy, a procedure which he prefers to immediate resection, and enterorrhaphy, as the intestine is in a better condition for such a serious operation, at the same time the surgeon is in a better condition to decide how much of the bowel must be removed. In this case the wound of the second operation was nearly healed, the action from the bowels regular, appetite good, no tympanitis, all symptoms indicative of a speedy and permanent recovery. A woman about 40 years of age, was shown, upon whom a gastro-enterostomy had been performed one week ago. The dressing was removed for the first time, and the wound was found united. The case was considered favorable for a pylorectomy, but a direct examination showed that the disease had extended behind the stomach, rendering extirpation impossible, consequently Wölfler's operation was performed. For a number of days after the operation the patient was nourished exclusively by rectal alimentation; at present she was allowed to take moderate quantities of food and experienced no difficulty in digestion. The relief afforded by the operation was prompt, and has continued without interruption.

In the case of a fæcal fistula in a girl about 18 years of age, where all ordinary measures to close the abnormal passage had failed, a favorable result was obtained by opening the abdomen through the median line, separating the bowel from the abdominal wall, and suturing the bowel in the usual manner. Attention was called to the importance of opening the abdomen some distance from the artificial anus, as such a procedure affords a better opportunity to ascertain the extent and nature of the adhesions, and affords greater facilities for their separation and the prevention of fæcal extravasation during the operation. In this case, not a single unpleasant symptom followed the operation.

With great interest I examined two cases of ectopia of the bladder. Both patients were females; one a child, the other an adult. In the child, a number of operations had succeeded in forming a perfect anterior wall, thus converting the imperfect bladder into a convenient receptacle. The artificial wall in the woman remained imperfect, which will necessitate further operative interference.

I was informed that two cases of pyæmia, where the patients came into the hospital infected, had recovered, after a long illness, under the influence of large doses of stimulants. In one case the presence of pulmonary infarcts was unmistakable, and yet complete recovery followed. These cases only prove that even in pyæmia, recovery need not be despaired of in cases where life can be prolonged until a period of limitation is reached when the specific cause loses its toxic effect on the organism, is exhausted, and is no longer in a condition to furnish the material for the progressive production of the microbes.

The antiseptic treatment in this hospital is rigidly and conscientiously followed, a circumstance which certainly must come in for a great share of the credit pertaining to the remarkable recoveries after the most serious and dangerous operations. One forenoon I devoted to a visit to the gynecological and obstetrical wards, under the care of Professor Freund. The wards are in a new building only recently occupied, and located *vis-a-vis* the Surgical Klinik. The building is a model of its kind and a credit to the German Government, which has spared no expense in making it perfect as a centre for clinical teaching. Professor Freund takes a just pride in the institution which has developed into such a magnificent hospital and school for teaching under his personal supervision, and is untiring in his efforts in pointing out its advantages and modern improvements. In the lying-in department the antiseptic precautions are so thoroughly carried out that puerperal sepsis has never been known to originate in the wards. A small building, isolated from the main building, serves for the reception and treatment of infected patients from the city and the surrounding country, and here the student finds the only opportunity to study at the bedside and the post-mortem room the infective diseases incident to childbed.

There is certainly a great deal of truth in the statement made by the famous Robert Koch, in answer to my question relative to the nature of septicæmia, that this disease is beyond the grasp of the pathologist in Germany, as antisepsis had succeeded in almost exterminating the disease in that country. I sympathize sincerely with the pathologists, but rejoice at the results obtained by Joseph Lister and his followers in expunging from the catalogue of diseases one of the most fatal and fearful complications of the obstetrical and surgical wards. In the face of these facts who can doubt any longer the efficiency of antiseptic precautions in preventing infection? Who will dare to ridicule the honest, conscientious surgeon and obstetrician in his efforts to protect his patients against infection? Who will have the courage to recommend a pad of infective germs as a safe dressing for penetrating wounds of the abdomen? Let history, science, and the combined experiences of thousands of honest physicians and surgeons answer these questions.

Professor Freund related to me the history of a very interesting case that recently came under his observation. A patient was brought into the hospital suffering from all the symptoms of pyosalpinx. Abdominal section was performed, and a careful digital exploration appeared to confirm the diagnosis.

On one side of the uterus, corresponding to one of the tubes, a hard, adherent mass was found, which was removed entire with great difficulty, on account of firm universal adhesions, in the separation of which severe hæmorrhage was incurred. After the mass was removed the large cavity was filled with a tampon, and all bleeding arrested by compression and ligature. Section of the mass revealed in its interior a hairpin. This common instrument of destruction had evidently been used to produce abortion, had perforated the uterus, and caused the suppurative parametritis—another sad illustration of the folly of women in attempting limitation of offspring.

A number of recent laparotomies showed no temperature and were on a fair way to recovery. All abdominal operations are performed under strict antiseptic precautions, with the exclusion of the doubtful spray. I examined with interest numerous frozen sections illustrating the normal anatomy and various pathological conditions of the female pelvic organs, which were fastened upon a wire framework, according to the device of Professor Freund, and kept as wet specimens. You will recollect that Professor Winckel adopted this method of mounting in obtaining his photographic illustrations for his great atlas.

A visit to the Pathological Institute brought me face to face with one of Germany's greatest pathologists, the distinguished von Recklinghausen. I found him smoking his morning cigar, but deeply engaged in his arduous work. Previous experience satisfied me that the director of one of the best pathological museums would spare neither time nor labor to show me the most interesting specimens. I found here the largest collection of specimens illustrative of diseases of the pancreas. I was exceedingly anxious to examine the specimen of pancreatic calculi with ectasia of the common duct, but when we searched for it where it should naturally belong it could not be found, a circumstance which almost instantaneously changed the placid temper of the professor into a rage. Shelf after shelf was examined, but that specimen, in some unaccountable way, had disappeared. I suggested that we abandon the search, but this only stimulated him to renewed energy, and I heard from behind the cases language more forcible than elegant, until the unhappy "devil" of the museum remembered the exact *locus* of the wandering pancreas, and he brought the specimen triumphantly to the excited director, whose countenance at once assumed its wonted tranquil, peaceful aspect. The average German professor is a typical representative of system and order, and the displacement of a specimen is considered in the light of a criminal offense, and, as the learned professor said on this occasion: "So etwas darf hier nicht vorkommen."

In a short time three new specimens have been added to the pancreatic collection. One of them consisisted of a solid tumor, probably malignant, in the head of the organ, with a large cyst on the peripheral side. During life only the cyst was recognized, and after an exploratory puncture a probable cyst of the pancreas was diagnosticated. Professor Luecke performed abdominal section, stitched the cyst to the wound, opened and drained it. Next day *exitus letalis*. The post-mortem examination showed that the primary disease had originated in the head of the pancreas and had involved the adjacent tissues; the cyst had been caused, undoubtedly, by progressive destruction of the secretory structures of the pancreas and obstruction of the cystic duct. The second specimen is a large cyst, removed post-mortem, where no communication exists between the cyst and the duct. The third specimen represents a primary carcinoma of the pancreas without the formation of cysts. The more I study the etiology of cysts of the pancreas, the more I become convinced that simple obstruction is inadequate to cause a cystic dilatation of the duct, as in such cases, as long as the gland remains intact, the pancreatic juice is absorbed; in other words, a retention cyst cannot be produced as long as auto absorption remains intact. But, in cases in which the cause of the obstruction affects deleteriously the parenchyma of the organ, absorption no longer takes place, and the combined effect of obstruction and accumulation of the products of secretion from intact portions of the gland on the distal side of the obstruction, result in the formation of a retention cyst.

This museum contains three beautiful specimens of myositis ossificans. In all of them the production of new bone is most marked in the extensor muscles of the back and in the vicinity of the hip joint; in the latter location braces of new bone connect the pelvis with the femur, so that, with an intact hip joint, perfect immobilization of the thigh bone has taken place, always in a flexed position. In regard to the true pathology and etiology of this singular disease, little or nothing is known. At the meeting of the German Congress of Surgeons recently held in Berlin, Professor Helferich, of Greifswald, showed a young man suffering from this disease who had been under his observation for seven years. The disease commenced as an acute attack resembling rheumatism, followed in a short time by production of bone along the course of the affected muscles. It is more than probable that the ossifying process is limited to the connective tissue around and within the muscles, and that the muscular fibres disappear in consequence of pressure, atrophy, and interstitial absorption on the part of the new osteogenetic material.

N. SENN.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Cancer of the Pancreas—Epithelioma of Penis—Intubation; Feeding after Intubation; Statistics of Intubation; Pathology of Intubation.

At a recent meeting of the New York County Medical Association, Dr. Thomas C. Taylor read the report of a case of *Cancer of the Pancreas*, with infiltration of the omentum and walls of the stomach, along the greater curvature, occurring in a female of

30 years. The case was interesting both on account of the infrequency of the affection and the obscurity of its diagnosis. In this case, three important and common symptoms generally regarded as diagnostic of pancreatic cancer: jaundice, œdema, and fat in the alvine discharges, were absent. Dr. Taylor thought Da Costa's manner of diagnosticating these cases the most feasible—that by exclusion. As to the possibility of prolonging life by operation in a case of cancer of the pancreas, if the diagnosis could be made early enough, the two cases reported by Billroth were of much interest; he had made a partial resection of the organ, removing the tail in one and a portion of the head in the other case, but, of course, not injuring the duct. Both patients recovered from the immediate effects of the operation, but how long they lived, or whether the disease returned, is not stated. Dr. Taylor thought that when he first saw his case, but a very small portion of the head was involved, and that if the diagnosis could then have been made, it would have been an excellent opportunity to perform an operation similar to Billroth's.

At the same meeting Dr. J. R. MacGregor presented a portion of a *Penis Amputated for Epithelioma.* At the operation care was taken to prevent subsequent constriction of the urethra in the stump, and thus far the result was satisfactory. The chances were fair that the growth would not recur. Dr. J. W. S. Gouley said it was of interest that in epithelioma of the glans or prepuce there is always antecedent balanitis or balano-posthitis, and most cases occur in persons who have chronic balanitis; this condition being chiefly due to lack of cleanliness. In such cases epithelioma develops rapidly, and soon involves both the mucous membrane and the corpora cavernosa. In his experience, amputation, as usually resorted to in these cases, is insufficient, and is likely to be followed by a more or less rapid recurrence, which always commences at the end of the stump. Atresia urethræ is also likely to be a very unpleasant consequence of the operation, and he related a case in which, although there was no return of the cancer, the patient died within two years from pyelo-nephritis due to atresia thus produced. In one case of amputation for epithelioma, he first used the écraseur to break up the cavernous bodies. Then, leaving the urethra fully three-quarters of an inch longer than the stump, he fastened it to the free extremities of the cavernous bodies. On account of the frequency of recurrence, he determined to excise the whole penis in his next case; and in April, 1878, he did this operation on a patient 50 years old. He dissected out the entire organ, without opening the cavernous bodies, and removed the crura and all. About one half of the cavernous bodies had been invaded by the growth. The patient was discharged cured within two months; but he knew nothing of the subsequent history of the case. It seemed to him that such a radical operation was the *best* safeguard against recurrence; for if the slightest deposit remained the growth would recur. In the majority of cases it was not only justifiable, but the most proper measure to adopt. It is not a formidable operation, and in his case the patient made a rapid recovery.

Dr. Bryant referred to three cases of amputation of the penis in his own practice. In two the operation was done for cancer involving the glans and anterior portion of the organ, and in the third for general carcinoma, involving not only the penis, but the whole system. He believed that the entire removal of the penis is the only ultimately safe procedure. But if the growth be very slight, it might be allowable to consult the patient's wishes, and if he object, make the amputation præ-scrotal.

Intubation was the subject of discussion at the first meeting of the Academy of Medicine in June. Dr. F. Huber's paper was a study of forty-seven cases from his own practice. Of these twenty-nine, with eleven recoveries, were in children under 3 years of age, and eighteen, with nine recoveries, in children of 3 years or over. Of the children under 3 years, one was 9½ months old, one 10½ months, two 11 months, one 1 year, two 2 years, two 2½ years, and two 2 years and 8 months old. Of all the children that he had been of late called upon to treat for laryngeal stenosis, he had found it necessary to resort to intubation in only one out of every three or four cases; and he thought it should not be done until dangerous symptoms set in. He used it in the same class of cases in which, up to a year ago, he would have performed tracheotomy. The dyspnœa is as effectively relieved by intubation as by tracheotomy. The utility of intubation was fully established, and it has now passed the experimental stage. One of the most serious accidents that can occur is the pushing of dislodged membrane before the tube, and in such a case Dr. E. D. Ferguson, of Troy, performed tracheotomy. Several deaths have been reported from this accident, and Dr. Waxham has recently devised a long tracheal forceps for removing the membrane in such cases. In a case under his care he gave the child brandy, which excited such a fit of coughing as to expel both the tube and the membrane. As a rule, the tube can be dispensed with at a much earlier date than the tracheotomy tube. If respiration continues free, it should generally be allowed to remain until at least the fifth or sixth day; but if the breathing becomes noisy, it should be promptly removed and afterwards reintroduced, if necessary. When there are diphtheritic patches in the nose or pharynx, it is advisable, as a rule, to leave the tube in position until they disappear. In intubation, as in tracheotomy, the prognosis is more favorable when there is simply local obstruction in the larynx than in cases of marked constitutional infection from diphtheritic poison. No positive prognosis should ever be made until 48 hours after intubation. Intubation, he believes, will save many cases in which tracheotomy will not be permitted, and many which would die if the latter were performed, especially in children under 3 years. No age appears a contraindication to intubation. Of 12 cases in which he had done tracheotomy, 10 died. He felt warranted in assigning to intubation a much higher position. As regards medicinal treatment, he uses bichloride of mercury throughout the disease, whether intubation were prac-

tised or not. He gives gr. ⅙–ss, and in severe cases gr. j, in divided doses, in twenty four hours. If there be much dysphagia, he uses tablet triturates, gr. $\frac{1}{40}$ each, mixed with sugar, and placed dry upon the tongue. With extensive diphtheritic membranes in the fauces he also uses tincture of iron and chlorate of potassium. In threatened heart-failure he uses brandy, caffeine, etc. If the temperature be very high, antipyretics are used, by the mouth or rectum. He also uses the steam atomizer to produce a moist vapor.

Dr. J. O'Dwyer read a paper on *Feeding after Intubation.* As a rule, solids and semi-solids are taken much better than liquids after intubation. In a number of cases he had removed the tube in order to give nourishment; but the results were scarcely better than when it was in position. Sometimes swallowing is easier after than before intubation, on account of the relief afforded to the urgent dyspnœa. The longer the tube remains in position, the easier it generally is to swallow. When the patient is old enough to umderstand, he should be instructed to drink rapidly, and to take as much fluid as possible at one time. Sometimes he uses rectal alimentation, but very seldom uses the stomach-tube. He does not think that food is a cause of pneumonia after intubation, as he has never seen any evidence of milk or other nourishment being found in the minute bronchi. He had known an adult patient to wear a tube for more than ten months, who not only did not have pneumonia, but meanwhile was cured of bronchitis, which he had when the tube was put in. The secretions, he thinks, are the source of the pneumonia met with after intubation, they being aspirated into the finer bronchi. It is due primarily to the presence of the tube, because it impairs the patient's power of expulsion. As to removing membranes with the forceps, the subglottic division of the tube is of such narrow calibre that it is practically impossible to use this instrument, and he has devised a flexible apparatus for this purpose, somewhat on the principle of the umbrella probang.

Dr. Dillon Brown read a paper on the *Statistical Records of Intubation.* So far as he had been able to ascertain, 760 cases, by 54 different operators, had been reported; he had tabulated 502 cases—211, or 27.07 per cent., had recovered. The average age in fatal cases was 3 years and 2 months; in recoveries, 4 years and 1 month. In the recoveries intubation was resorted to at an average period of 2 days and 9 hours after symptoms of laryngeal stenosis first appeared; and in fatal cases at an average period of 1 day and 19 hours. In the fatal cases the average time between intubation and death was 2 days and 8 hours; in the recoveries the tube was worn on an average for 5 days and 3½ hours. O'Dwyer had operated 78 times, Waxham 106, Dillon Brown 84, and Huber 47 times. Extension of the membranes to the bronchi was the most frequent cause of death. He believed that pneumonia, when present, was secondary in character.

Dr. W. P. Northrup read a paper on the *Pathological Anatomy of the Respiratory Tract after Death from Laryngeal Diphtheria and Intubation.* Since he read his paper on this subject before the Academy in December, in which he reported 87 cases, 20 additional fatal cases had occurred at the New York Foundling Asylum, to which he is pathologist. The cause of this large number during so short a period as four months was the occurrence of diphtheria in connection with a fatal epidemic of measles and scarlet fever. In his former paper he stated that he had never met with ulcers of the trachea; but in the 20 cases now reported for the first time there were deep ulcers, laying bare the rings of the trachea, in five cases. He had not met with ulceration of any consequence caused by the head of the tube; nothing more than necrosis of the epithelium. He had seen no evidence of aspiration pneumonia, as it had been called, due to the entrance of fluids into the finer bronchi.

Dr. Caillé had performed tracheotomy in 21 cases, with 5 recoveries, and intubation in 16 cases, with 6 recoveries. In his cases of intubation diphtheritic membranes were observed on the nares or pharynx in nine cases. In most of the cases intubation was done rather late. He believed that all the patients would have died without surgical interference, and that one who died would have been saved if intubation had been done earlier. The cause of death after intubation was catarrhal pneumonia in a majority of his cases. Most of the children who died had taken liquids, and of late he had allowed only solids cut up fine, with ice to allay thirst. Since doing this his results were better. P. B. P.

BERGEON'S METHOD.

Dear Sir:—Permit me briefly to call attention to a few points in the preparation of gas for Bergeon's treatment. After trying several methods I have, by travelling in a circle, again reached and for the present settled upon, marble chips and H_2SO_4 for generating the CO_2.

The objection which Dr. Babcock[1] makes regarding the irritating properties of the gas made from mineral acids is, in my practice, entirely avoided. A gas which made his "nostrils sting" was clearly unfit for use whether there were enteric ulcerations or not. I have discarded HCl. and use only H_2SO_4 (C.P.) because the by-products, (such as free chlorine gas) are much harder to get rid of with the former. I use a large mouthed half-gallon generating bottle, in which the marble chips (not dust) are placed. This is connected with the first wash bottle, (of which there are four, half-gallon size,) filled with a strong solution of sodium bicarbonate. Any acid fumes which are carried through would combine with the sodium liberating pure CO_2. The next two wash bottles are filled with simple water, unless it is desired to eliminate the H_2S, which is sometimes formed, in which case Ferric sulphate can be dissolved in one of them. As H_2S is not objectionable this is unnecessary. The last wash bottle is filled with the sulphur water, natural or artificial, which it is decided to use. I am using both, and have but little choice, except that the artificial water can be

[1] JOURNAL, May 21, 1887, p. 582.

made to impregnate the gas much more strongly with H_2S, and is much cheaper.

Everything being in readiness, and the gas bag connected. the H_2SO_4 is poured into the generating bottle. The marble chips should be previously tilted to one side of the bottle and made to remain there as much as possible by gently returning the bottle to the upright position. This prevents too rapid evolu tion of gas; and when the marble in the bottom of the bottle has been utilized fresh marble can be precipitated into the acid by gently shaking it. If the evolution of gas is slow it will be sufficiently pure for all practical purposes. If it bubbles through rapidly and violently the wash bottles will do but little good, and the gas will be pungent and irritating. The number of wash bottles could be increased to half a dozen if it was not thought to be properly washed.

I have had no "colicky pains" reported as a result of the gaseous injections, although I send away from my office bags large enough to last patients from two to three days. I think the reason is that my gas bags are of heavy rubber, through which osmosis must be difficult, and to any appreciable extent, perhaps impossible.

I have nothing to report clinically, except that all the patients upon whom I have used this treatment have shown improvement in some of the symptoms. I am not prepared to say that there has been arrest in any case, though one patient has used it faithfully for seven weeks.[2] It is, of course, too soon to ex press a final verdict; and we can only work on, hoping that it will prove something more than another chimera added to the long list of "consumption specifics." If its power of controlling symptoms should prove to be reliable, and prove to be its only value, Bergeon would still deserve well of his generation. Respectfully,

G. W. McCaskey, M.D.

Fort Wayne, Ind., May 24, 1887.

TAPPING VS. INCISION OF THE CYST IN OVARIOTOMY.

Dear Sir:—In the letter of Dr. N. Senn, published in The Journal of June 4, there occur on page 641, in reference to an ovariotomy by Mr. Langton, the following remarks: "The abdomen was opened by an incision through the linea alba about four inches in length, and the cyst tapped with the large trocar of Spencer Wells. The puncture was followed by a free escape of fluid along the sides of the trocar, and some of it entered the abdominal cavity, and the wound was freely irrigated with the cyst contents. . . . . It has always seemed to me that the use of a large trocar with a truncated cutting edge in tapping a tense cyst is attended invariably by extravasation of fluid, and consequently increases the risk of peritonitis. When the cyst contents are fluid, the patient should either be placed upon her side during the tapping, and proper precautions adopted to prevent entrance of fluid into the abdominal cavity, or the cyst should be emptied sufficiently to bring it into the wound by the use of a small trocar or by aspiration. In case the contents are colloid they will escape through no tube, and incision of the cyst with the patient on her side, and traction upon the cyst wall, so as to keep it in uninterrupted accurate contact with the abdominal wall, are the only measures which will accomplish the desired object with safety."

I heartily endorse the foregoing suggestions of Prof. Senn. Having for many years observed the inadequacy of the various forms of trocar in preventing the escape of cystic fluid along the sides of the instrument, I have latterly dispensed with it entirely in some cases, and opened the cyst with a knife instead. Dr. Carl Braun uses the same method.

The cyst having been exposed and the investigation of adhesions finished, a *dry* piece of antiseptic gauze folded into a pad of eight or more thicknesses is placed between the cyst and the incised abdominal wall on the side towards the operator. The patient is then rolled strongly over on the corresponding side, and the cyst pressed forward into the wound by the hand of an assistant applied against the flank. At a selected spot a small incision or puncture is made with the point of knife, the opening being subsequently enlarged to any extent desired. Besides the dry pad, and the intra abdominal pressure of the cyst, an additional guard against the entrance of cystic fluid into the peritoneal cavity may be furnished in the following manner: Take a piece of tin plate eight or ten inches long and four inches wide, and bend it lengthwise into the form of a half cylinder. The end of this trough, held against the cyst immediately below the point of the intended incision, will serve to convey any fluid which may possibly escape from the cut away from the field of operation. This device will be found of great service in whatever manner the cyst may be opened.

So soon as the cyst wall becomes sufficiently relaxed, I seize it in folds with strong dull-toothed vulsella, and by constant traction keep the opening and collapsing cyst outside the abdominal wound until complete extraction is accomplished.

A. Reeves Jackson, M.D.

271 Michigan Ave., Chicago.

[2] This patient died June 5th.

BOOK REVIEWS.

Diseases of Women. A handbook for physicians and Students. By Dr. F. Winckel, Professor of Gynæcology, and Director of the Royal University Clinic in Munich. Authorized Translation by J. H. Williamson, M.D., Resident Physician Allegheny General Hospital, Allegheny, Pennsylvania. Under the supervision of Theophilus Parvin, M.D., Professor of Obstetrics and Diseases of Women and Children in Jefferson Medical College, Philadelphia. 8vo., pp. xxix—674. Philadelphia: P. Blakiston, Son & Co. 1887.

It is a little more than a year since Professor Winckel's work was issued in Leipsig. As a teacher of obstetrics and gynæcology he has but few rivals,

and his numerous contributions to the literature of these subjects have made his name familiar to every reading physician. And as of late years obstetrics and gynæcology seem to have taken a new hold on the American Physicians, it seems peculiarly fitting that this work should have been translated in this country. Still better would it have been had the work been carefully annotated.

No one can read this book without being interested and instructed. Nor will one fail to be impressed with the idea—which is a fact—that the author is a most conservative gynæcologist; and there is not that neglect of gynæcological medicine for gynæcological surgery which many would possibly wish for. The reader will find here no encouragement for useless and reckless laparotomies, Tait, Battey and Hegar operations. It is pleasing to note that the author speaks of Sims in the very highest terms, and says: "We are indebted to the American, Marion Sims, more than to any one else, for a large part of our knowledge of, and progress in the treatment of diseases of women."

As a whole, the book is excellent. It would have been better, however, had more space been devoted to some subjects, as, for example, the varieties of salpingitis, and to tumors of the mammary gland. And it would have been well had the proof-reading been done by one familiar with German.

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PAPERS TO BE READ AT THE CONGRESS.

Dr. L. DeWecker, Paris, France, "Effusions in the Sheath of the Optic Nerve."

Dr. J. Hirschberg, Berlin, Germany, "Measuring and Operative Correction of Squint."

Dr. Galezowski, Paris, France, "The Operation of Cataract and the After-Treatment."

Dr. H. Power, London, England, "Microbes in the Development of Eye Diseases."

Dr. Ole Bull, Christiana, Norway, "Pathological Changes in Retinal Vessels."

Dr. L. Landolt, Paris, France, "Operation for Strabismus."

Dr. A. Mooren, Düsseldorf, Germany, 1, "Eye Troubles in their Relation to Occipital Diseases." 2, "The Most Simple Method of Cataract Operations."

Dr. W. A. Brailey, London, England, "Remarks on the Operative Treatment of Glaucoma."

Dr. Moura, Rio de Janeiro, Brazil, "Glaucoma in the Negro Races."

Dr. A. Gayet, Lyons, France, "Ocular Asepsis."

Dr. P. H. Mules, Manchester, England, 1, "Evisceration and the Artificial Vitreous." 2, "A Case of Ciliary Myoma (Intra-ocular)."

Dr. J. Samelsohn, Cologne, Germany, "Detachment of the Retina, its Pathology and Treatment."

Dr. F. Buller, Montreal, Canada, "Antipyrin in Ophthalmic Practice."

Dr. J. Richardson Cross, Bristol, England, "Retinoscopy."

Dr. Geo. F. Stevens, New York City, "Some Important Problems Respecting Insufficiencies of the Ocular Muscles."

Dr. L. Conner, Detroit, Mich., "Hot Water in the Treatment of Eye Diseases."

Dr. E. O. Shakespeare, Philadelphia, Pa., "Strength of the Superior Recti Muscles as a Cause of Disthenopia."

Dr. F. C. Hotz, Chicago, Ill., "Restoring the Normal Position of the Free Tarsal Border in Trichiasis."

Dr. P. D. Keyser, Philadelphia, Pa., "Operative Treatment of Posterior Synechia."

Dr. S. C. Ayres, Cincinnati, O., "Gummata of the Ciliary."

Dr. A. G. Heyl, Philadelphia, Pa., "Abnormalities of the Visual Axes."

Dr. D. S. Reynolds, Louisville, Ky., "Necessity for Reform in the Manner of Designating Lenses."

Dr. E. H. Linnell, Norwich, Conn., "Determination and Correction of Astigmatism."

Dr. A. R. Baker, Cleveland, Ohio, "Retinoscopy."

Dr. F. A. Eaton, Portland, Oregon, "Effects of Malarial Poisoning on the Eye."

Dr. H. C. Paddock, New York City, "Ergot of Rye in Ophthalmic Practice."

Dr. J. L. Minor, Memphis, Tenn., "Natural History of Strabismus."

Dr. J. W. Thompson, St. Paul, Minn., and Dr. G. A. Staples, Dubuque, Iowa, "Uncomplicated Tobacco Amaurosis."

Dr. H. Gifford, Omaha, Neb., "Further Contributions to Sympathetic Ophthalmia."

Dr. G. S. Norton, New York City, "The Relative Importance of Small Degrees of Astigmatism Causing Athenopia and Headache."

Dr. E. Jackson, Philadelphia, Pa., "The Designation of Prisms by the Minimum Deviation Instead of by the Refracting Angle."

Dr. T. E. Murrell, Little Rock, Ark., "The Best After-treatment for Cataract and Iridectomy Cases."

Dr. H. D. Bruns, New Orleans, La., 1, "On the Use of Atropia in Determining Anomalies of Refraction." 2, "Effects of Malarial Poison on the Eye."

Dr. E. J. Gardner, Chicago, Ill., "Small Degrees of Astigmatism, with the Annoyances Belonging to Them."

Dr. J. F. Fulton, St. Paul, Minn., "The Advantages of Early Operations in Strabismus."

Dr. J. F. Herbert, Philadelphia, Pa., "Retinoscopy."

Dr. A. E. Prince, Jacksonville, Ill., "Treatment of Dacryocystitis and Fistula by Drainage Canulas."

Dr. J. O. Tansley, New York City, "Lachrymal Catarrhs with Nasal Complications."

Dr. G. S. Munson, Albany, N. Y., "Formation of Bone in the Vitreous."

Dr. H. L. Stickel, Harrisburgh, Pa., "Advantages of Very Hot over Very Cold Water in the Treatment of Acute Inflammations of the Eye."

Dr. F. B. Tiffany, Kansas City, Mo., "Ametropia."

Dr. C. J. Lundy, Detroit, Mich., "Tumors of the Corneo-Conjunctival Limbus."

Dr. B. Pitts, St. Joseph, Mo., "Best Method of Operating for Ectropion."

Dr. Robert L. Randolph, Baltimore, Md., "Sympathetic Ophthalmia."

Several other papers have been promised by distinguished ophthalmic surgeons, but the titles have not yet been sent in.

ASSOCIATION ITEMS.

TREASURER'S REPORT.—The following itemized report of the Treasurer was not received in time to appear in record of proceedings in the number of THE JOURNAL for June 25, 1887.—ED.

DR. RICHARD J. DUNGLISON, TREASURER,
IN ACCOUNT WITH THE AMERICAN MEDICAL ASSOCIATION.

1886. DR.

May 1,	To cash balance as per report at St. Louis meeting	$ 378.39
" 7,	To cash from members and delegates at St. Louis meeting, less exchange	5,114.20
1887.		
June 1,	To cash from members, annual dues to date	8,650.00
"	To cash from office of publication of The Journal, advertisements, subscriptions, etc., to date	7,580.63
		$21,723.22

1886. CR.

May 19,	By cash to Dr. R. J. Dunglison, Treasurer, travel, postage, telegrams, expressage, etc.	$115.00
" 29,	By cash to Dr. W. B. Atkinson, Permanent Secretary, expenses of travel, etc.	102.86
May 31,	By cash for stamped envelopes, telegrams, expressage, collection charges, etc.	48.75
June 2,	By cash to Dr. LeGrand Atwood, Chairman Com. of Arr. St. Louis meeting, rental of building and printing	650.00
" 5,	By cash refunded members by order of the Association	20.00
" 19,	By cash to Wm. F. Fell & Co., printing circulars, postal cards, etc.	30.60
July 6,	By cash for postage, collection charges, exchange, rental of P. O. box, etc.	22.43
" 27,	By cash to Wm. F. Fell & Co., stamped envelopes and postals	17.20
" 28,	By cash to Dunlap & Clarke, printing bill	52.20
" 31,	By cash to Wm. F. Fell & Co., stamped envelopes	17.24
Aug. 3,	By cash to Altman & Co., stationery, printing, etc.	12.59
" 5,	By cash for postage, stamped envelopes, collection charges	32.80
Sept. 3,	By cash to Wm. F. Fell & Co., printing circulars, blanks, postals, etc.	10.25
Nov. 1,	By cash to Dr. C. H. A. Kleinschmidt, Librarian, expressage	15.60
" 1,	By cash to Geo. S. Davis, subscription to Index Medicus	10.00
" 17,	By cash for postage, stamped envelopes, collection charges to date	45.86
1887.		
Jan. 22,	By cash for postage, stamped envelopes, stationery, exchange, collection charges, etc.	81.85
Feb. 5,	By cash to Wm. F. Fell & Co., printing circulars, notices, etc.	9.50
" 5,	By cash to Dunlap & Clarke, printing circulars, notices, postal cards, etc.	10.25
Mar. 30,	By cash for postage, stamped envelopes, rental of P. O. box, collection charges, exchange, to date	52.95
May 27,	By cash to Lea Brothers & Co., expenses of Transactions, postage, etc., on Transactions	18.85
" 27,	By cash to Dr. C. H. A. Kleinschmidt, Librarian, expressage, stationary, postage	12.95
" 27,	By cash for postage, expressage, stationery, collection charges, exchange	80.72
" 30,	By cash to Wm. F. Fell & Co., printing circulars, stamped envelopes, registration books, etc.	29.50
" 31,	By cash to Dunlap and Clarke, printing	13.00
" 31,	By cash to Dr. N. S. Davis, Editor, expenses of publication of Journal to date	14,547.55
" 31,	By cash to Dr. N. S. Davis, Editor, editorial work to date	4,258.95
	Balance	1,403.77
		$21,723.22

CHICAGO, June 7, 1887.

This certifies that I have carefully examined the accounts of R. J. Dunglison, Treasurer of the American Medical Association, to this date, and find them accurately added and properly vouched, and that there is in his hands a balance of one thousand four hundred and three dollars and seventy-seven cents ($1,403.77).

(Signed) ALONZO GARCELON,
Chairman of Auditing Committee.

CORRECTION.—At the request of Dr. B. A. Watson, of Jersey City, the name of Dr. L. B. Godfrey, of Camden, N. J., has been substituted for his own, as the representative of New Jersey on the committee on State Medicine.

MISCELLANEOUS.

PRACTICAL RESULTS IN RESTRICTING DIPHTHERIA.—Bearing on the communicability of diphtheria and the practicability of its restriction, at a meeting of the state Medical Society of Michigan, May 13, 1887, Dr. Baker presented a table and a diagram based on a compilation of reports by local health officers in Michigan for the year 1886. They exhibit the results of isolation and disinfection in outbreaks of diphtheria. In the 102 outbreaks where isolation or disinfection, or both, were neglected, the average *cases* per outbreak were a little over 16, and the average *deaths* were 3.23; while in the 116 outbreaks in which isolation and disinfection were both enforced, the average *cases* per outbreak was 2.86,

and the average *deaths* were .66; indicating a saving of over 13 cases and 2.57 deaths per outbreak, or 1,545 cases and 298 deaths during the year, by isolation and disinfection in the 116 outbreaks, compared with those in which nothing was done.

TABLE.—Diphtheria in Michigan in 1886: Exhibiting the average numbers of cases and deaths per outbreak, 1, in all the 461 outbreaks reported; 2, in the 243 outbreaks in which it is doubtful whether or not disinfection and isolation were secured; 3, in the 102 outbreaks in which isolation or disinfection, or both, were neglected; and 4, in the outbreaks in which isolation and disinfection were both enforced. Compiled in the office of the Secretary of the State Board of Health, from reports made by local health officers.

	(1) All outbreaks.[1] (461 outbreaks.)		(2) Isolation or disinfection not mentioned or statements doubtful.[2] (243 outbreaks.)		(3) Isolation or disinfection or both neglected. (102 outbreaks.)		(4) Isolat'n and disinfection both enforced. (116 outbreaks.)	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Totals.....	3,085	656	1,103	250	1,650	329	332	77
Averages.....	6.69	1.42	4.54	1.03	16.18	3.23	2.86	.66

[1] These do not include the cases in Detroit and Grand Rapids.

[2] It is possible that, in giving the public the benefit of the doubt, cases are sometimes reported diphtheritic which ultimately prove otherwise. Many of these being limited to one or two cases, may bring the averages in these columns concerning which least is known below what they really should be. All cases and deaths concerning which positive statements were made by health officers are included in the columns marked 3 and 4.

THE RUSH MONUMENT.—The State Medical Society of California at the recent session in San Francisco, April 20, unanimously adopted resolutions heartily approving the project of erecting a statue of "the immortal Benjamin Rush," in the City of Washington, and requesting the various medical journals to call upon every physician in the State, to contribute the very modest sum of one dollar each to which the subscription has been limited.

MEDICO LEGAL SOCIETY OF CHICAGO.—At the annual meeting of this Society held June 4, the following officers were elected for the ensuing year: President, E. J. Doering, M.D.; First Vice-President, Boerne Bettman, M.D.; Second Vice-President, Erie Winters, Esq.; Treasurer, L. L. McArthur, M.D.; and Secretary, Scott Helm, M.D.

MERITED HONORS TO PROFESSOR ESMARCH.—Letters of Nobility have been given by the Emperor of Germany to F. Esmarch, Professor of Surgery of the Faculty of Medicine at Kiel.

MEDICAL SOCIETY OF THE STATE OF WEST VIRGINIA will hold its twentieth annual meeting at the White Sulphur Springs, W. Va., July 13, 14 and 15, 1887. President, S. L. Jepson, of Wheeling, and Secretary, J. L. Fullerton, of Charleston.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 11, 1887, TO JUNE 24, 1887.

Col. J. H. Baxter, chief Medical Purveyor, to proceed to New York City for the purpose of inspecting the medical purveying depot at that place. S. O. 133, A. G. O., June 10, 1887.

Par. 15, S. O. 52, A. G. O., March 5, 1887, is so amended by Par. 9, S. O. 133, A. G O., June 10, 1887, as to direct that Major Chas. H. Alder, Surgeon, be relieved from duty in Dept. of Dak. about June 20, 1887, and he is granted leave of absence from the date when so relieved, to include August 27, 1887.

Major B. E. Fryer, Surgeon, found incapacitated for active service by an Army Retiring Board, and granted leave of absence until further orders on account of disability. S. O. 133, A. G. O. June 10, 1887.

Capt. Jno. D. Hall, Asst. Surgeon, leave of absence extended one month. S. O. 136, A. G. O., June 14, 1887.

Major J. H. Bartholf, Surgeon, granted leave of absence for two months, to take effect about July 5, 1887. S. O. 141, A. G. O., June 20, 1887.

Capt. Chas. Richard, Asst. Surgeon, sick leave extended two months, on surgeon's certificate of disability. S. O. 139, A. G. O., June 17, 1887.

Capt. Jno. J. Cochran, Asst. Surgeon, granted leave of absence for one month. S. O. 143, A. G. O., June 22, 1887.

First Lieut. W. C. Borden, Asst. Surgeon, granted leave of absence for one month. S. O. 135, A. G. O., June 16, 1887.

First Lieut. Wm. N. Suter, Asst. Surgeon, designated as medical officer for the rifle camp at Creedmoor, N. Y., July 5, 1887. S. O. 124, Div. Atlantic, June 21, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE TWO WEEKS ENDING JUNE 25, 1887.

Surgeon Thomas C. Walton, ordered June 15 for examination preliminary to promotion as Medical Inspector.

Surgeon A. F. Price, detached from special duty at Annapolis, Md., proceed home and wait orders.

Surgeon James M. Flint, detached from the "Albatross," and ordered to the Smithsonian Institution.

P. A. Surgeon W. G. Willson, ordered to the receiving ship "Independence," Mare Island, Cal.

Medical Inspector C. J. Cleborne, ordered for examination preliminary to promotion as Medical Director.

P. A. Surgeon G. P. Lumsden, ordered to receiving ship "Franklin," Norfolk, Va.

Medical Director P. J. Horwitz, permission to leave the United States for six months.

Asst. Surgeon H. N. T. Harris, commissioned Asst. Surgeon in the Navy June 13, 1887.

Medical Inspector J. C. Spear, detached from Naval Laboratory, and granted three months' leave.

Medical Director Delavan Bloodgood, detached from Naval Hospital, Norfolk, Va., and to the Naval Laboratory.

Medical Inspector Michael Bradley, ordered to Naval Hospital, Norfolk, Va.

P. A. Surgeon H. G. Beyer, remain on present duty until September 1, 1887.

P. A. Surgeon C. G. Herndon, remain on present duty until June 17, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDED JUNE 18, 1887.

Asst. Surgeon W. D. Bratton, to proceed to Seattle, W. T., on special duty. June 8, 1887. When relieved to rejoin station at San Francisco, Cal. June 11, 1887.

Asst. Surgeon R. B. Watkins, granted leave of absence for thirty days. June 8, 1887.

Asst. Surgeon F. C. Heath, to proceed to Marine Hospital, Detroit, Mich., for temporary duty. June 17, 1887.

CORRIGENDA.

In THE JOURNAL, June 25, p. 719, the first line of quotation top first column should read "A very little little let us do."

In the list of contributors to the Rush Monument Fund, given in the issue of the 25th June, No. 26, Vol. 8, the name of John E. Bready, M.D., of the Marine Hospital Service, is erroneously given as J. E. Bradly.

Dr. Henry O. Marcy's name was inadvertently omitted in the signatures to the report of the committee on memorializing Congress relative to medical and sanitary service on board immigrant passenger vessels, as published in THE JOURNAL June 25. Dr. Marcy has been a member of the committee from the first, and has heartily coöperated in its work and report.